THE MARINE RECORD

ESTABLISHED 1878

VOL. XIX. NO. 5. CLEVELAND, OHIO, JANUARY 30, 1896. $2 PER YEAR. 10c. SINGLE COPY.

SHIP BUILDING AND REPAIRS.

A NEW YARD IN CLEVELAND.

L. P. & J. A. Smith have established a new temporary shipyard in Cleveland, just east of Willow Street bridge in Whisky Island. They have purchased material, which is already arriving at the yard, and will at once proceed with the construction of two large steel dump scows, each to be 150 feet long by 30 feet beam and 12 feet depth, with a capacity for 600 yards of mud. Steel scows are not entirely new on the lakes. One was built at Sault St. Marie last year, and another is in service at Chicago. Both are small, however, and will not compare with those now building in Cleveland. These will be divided into several compartments, with improved apparatus for dumping. To prevent damage from collision, while knocking about the harbor, six longitudinal fenders of wood will be fastened on each side. This firm, or the company which they control, built three harbor tugs of steel a few years ago, with which they express themselves as excellently satisfied. Proof of this seems to lie in the farther advances which they are making in the line of metal equipment.

Bay City papers announced that Capt. James Davidson had closed a contract for a new wooden steamer. The soft impeachment is denied at the yard, Capt. Davidson stating that nothing has been agreed upon as yet. Mr. George Moore of Buffalo, has placed a contract with David Bell, of Buffalo, for a steel yacht for Niagara River, to be 75 feet long, with a draft of only 4½ feet.

R. Brittain, of Saugatuck, Mich., will build a tug for the Muskegon Boom Co.

LAKE BUILT OCEAN YACHTS.

At the yard of Davis & Sons, Kingston, Ont., a steam yacht, the Miltonian, is now in course of construction for Mr. A. E. Knopf, of No. 36 Spruce street, New York. The hull is 70 feet long over all, 60 feet l. w. l., 12 feet 3 inches beam, 5 feet 9 inches depth, and 3 feet 10 inches draft, with a displacement of 28 tons. Her frames are double, spaced 18-inch centers, moulded 4 inches at keel and 3 inches at top, 1½ inches flitch double, and bolted together. Keel and keelson are both 6x8 inches, well-bolted through bottom and clinched. The clamps and shelf are 2x6 inches, all bolted with screw bolts. All the timber is white oak of the very best quality. The cabins are of the trunk style, finished with Pennsylvania cherry, with two staterooms, one cook room and

(CONTINUED ON PAGE 7)

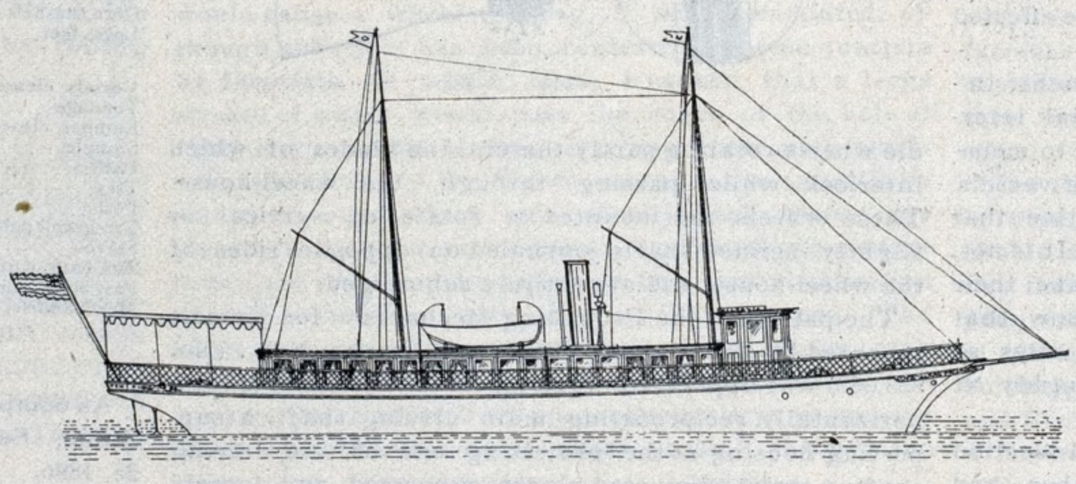
A LULL IN CHARTERING.

Some business is being done in wheat out of Duluth, and Chicago, the business from Duluth being chiefly to Kingston, at 5½c, including winter storage. From Chicago to Buffalo the basing rate is 2⅝c to Buffalo on corn; full particulars as to chartering appear as usual in our Chicago letter. This, however, is the sum total of the freight market, and no contract arrangements are being made for either ore or coal, although a little business in the latter line may turn up at almost any time.

While possibly all may not be true that has appeared in the dailies regarding an ironclad agreement of ore dealers and mine operators to keep this year's output down to 10,000,000 tons, these reports are substantially correct in the indications they give of the desires of the ore producers. An agreement has been formed covering practically all the Lake Superior ores, on the same lines as that which governed the Bessemer output last year. The furnace men, especially such of them as have acquired interests in mining property, seem to be in hearty sympathy and co-operation with the movement of the mine operators and the output will undoubtedly be restricted to the wants of the furnaces.

At the same time, there is reason to believe that the furnaces will consume considerably more than ten million tons of next season's output, as there is every indication of heavy business in unfinished products as soon as money becomes a little more plentiful in the spring. Railroads contemplate heavy expenditures for rolling stock, in which steel is constantly replacing wooden parts, and for bridges and rails, as soon as they can see their way clear financially. For structural work the outlook is extremely bright. The furnaces will not be able to run as continuously this year as last, when all had been put in excellent trim during their long idleness; but this deficiency in pig iron productive capacity will be more than counterbalanced by the the erection of new furnaces which are certain to be heavy consumers of ore.

On all these grounds the more sanguine are confident that this year's output of ore will reach 12,000 000 tons,



STEAM YACHT MILTONIAN—Building by Davis & Sons, Kingston, Ontario, Canada.

and there is no question that if the demand requires it, this amount can easily be produced and brought down. The general feeling at present, however, is that the increase will not be so heavy, although all agree in thinking that the output will be considerably in excess of the alleged limit of 10,000,000 tons.

Ore men express themselves as very much averse to paying more than $1 from the head of Lake Superior; but while about 300,000 tons were provided for at that figure late in the autumn the feeling is considerably stronger, and the demand of vessel men is $1.20 to $1.25. There is not much disposition on either side to struggle, as there is still plenty of time before spring; but tentative arrangements have been made in many instances between ore dealers and vessel owners for certain blocks to be carried down next season, rates and other details to be settled later.

Anything that may be done in the way of coal transportation contracts will be accomplished by such companies as own their own docks at the upper lake ports and sell their coal from those points. There have been no large sales yet made up there, the time being hardly ripe for this. The feeling is considerably stiffer, due to the meagre profits of past years and the better understanding between coal mine operators, and if prices improve, freights will be better likewise.

THE GRAND LODGE OF SHIP MASTERS.

The Ship Masters' Association accomplished a good deal of very valuable work while at Washington. The delegates representing the various lodges were as follows:

Buffalo Lodge, No. 1—F. D. Welcome, F. J. McCabe.
Port Huron, No. 2—W. E. Rice.
Chicago, No. 3—Robert Young, H. F. Loftus.
Cleveland, No. 4—W. S. Mack, J. A. Holmes.
Bay City, No. 5—C. D. Brown.
Milwaukee, No. 6—C. M. Davis, Henry Leisk.
Detroit, No. 7—C. L. Wilson, A. J. McKay.
Marine City, No 8—J. A. Ward, George A. Shaw.
Toledo, No. 9—Henry Root, Duncan Stalker.

ADDRESS OF THE GRAND PRESIDENT.

Grand President C. E. Benham, of Cleveland, opened his annual address by referring briefly to the reasons for calling the grand lodge at Washington, and spoke of the prosperity of the organization as contrasted with early struggles, giving considerable credit to the unremitting energy of Grand President Clark. There are now, said Capt. Benham, nine prosperous lodges of practical ship masters, intelligent men and reputable citizens. In days gone by the vessel master had little to say in regard to regulations. His opinion was not wanted by the framers of legislation. But the old fable of the bundle of sticks here had its moral. One or two had not sufficient influence to effect any reforms; but with the change from 150-ton boats to ships of 6,000 tons a change had also come over the masters. He dwelt forcibly on the necessity that each member of the association should look carefully after his own conduct, in order that no reflections might be made upon the fraternity as a class, or upon the organization.

The Grand President then referred somewhat in detail to the year's work of the order including the good accomplished by the visit to Washington of a delegation of the Ship Masters in the interest of the White bill.

Grand President Benham referred to the fact that certain persons representing boats had on occasion been known to overstep the bounds of propriety and authority in giving instructions to masters, and interfering with their duties. Any master, he said, who followed instructions in this manner violated the oath which he made before the inspector. He hoped that any master experiencing annoyance in this way in the future would report the matter to his lodge. Capt. Benham spoke of the lectures delivered before the lodges by government officials and others, and said they should be appreciated and encouraged. He said there had been complaints that masters were failing to comply with the navigation laws, and he hoped these matters would be taken up in the local lodges and fully and freely discussed.

At the last session of the grand lodge the grand financial secretary had been instructed to issue a special assessment upon the members in the event of the death of any member. This had been done, and unless other action was taken would continue to be done this year, when the insurance fund would be placed upon a solid footing. He said all local lodges should see that their effects were properly covered by insurance. Each of the members should read carefully the proceedings of the grand lodge, and see for themselves how carefully the grand financial secretary had kept the ac-

(CONTINUED ON PAGE 7)

THE CANADIAN MASTERS' ASSOCIATION.

Special Correspondence to The Marine Record.

TORONTO, January 24.

The Canadian Masters' Association was organized at Toronto on Wednesday, the 23d inst., for the purpose of mutual benefit, social intercourse and advancement in the science of navigatiou. The charter membership is twenty-five, and this number will be rapidly added to. Other Canadian ports are expected to fall into line soon and organize local branches.

The officers of the new organization were chosen as follows: Captain, Capt. John McGiffin; First Officer, Capt. A. Thompson; second officer, Capt. A. Tymon; Purser, Capt. J. V. Trowell; Assistant Purser, Capt. F. Jackman. At the meeting held on Wednesday, the following motion was unanimously carried:

In view of the fact that an erroneous report concerning our last meeting has been circulated regarding an offer of services to the British Government in event of war, be it resolved that our Purser be instructed to forward the following to the MARINE RECORD:

"Toronto Harbor No. 1 of the Canadian Masters' Association, to our American cousin vessel masters, greeting. Should you ever, through dangers of navigation, be in need of assistance such as one vessel man can render to another at times, you will always find the members of our association ready and willing to render such assistance as lies in their power, and hope that instead of converting steel into implements of war it will be utilized in adding to the list of magnificent ships now navigating our inland seas. Come and see us when in this port."

LAKE PILOTS' ASSOCIATION.

Cleveland Lodge, the pioneer organization of the Lake Pilots' Association, has almost completed its first year auspiciously, and anticipates great prosperity. The lodge now consists of about eighty members, and occupies the hall at Nos. 94-96 Superior street. Tuesday is the regular meeting night, but the rooms are used for club and soeial purposes during the daytime. The lodge, which has leased the hall, sub-rents it at night and expects to gain considerable revenue in this way.

The Lake Pilots' Association is spreading out, under the able organization of Capt. James Buchanan. Port Huron recently formed a lodge with forty charter members, and new local organizations will shortly be effected at Detroit and Duluth.

The objects of the association are mutual benefit, improvement of the standing of the craft, social intercourse, etc. All duly licensed pilots are eligible to membership, except those owning vessels or parts of vessels This provision might seem to some an indication that the association is something of a labor union. It is not, however, members being at full liberty to make their own terms. The real object seems to be to show that the association is as much for the benefit of mates as of masters, and to make the former feel thoroughly at home in the organization.

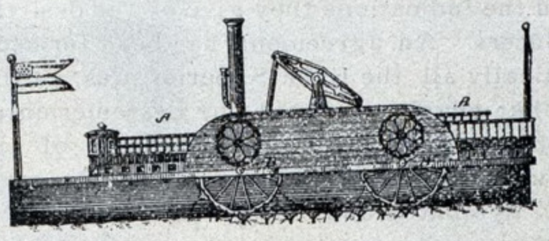
As prescribed by the constitution, the annual election of officers was held in the latter part of December, and resulted as follows: Captain, J. H. Boothman; First Officer, Samuel Allen; Second Officer, James Mooney; Purser, Thomas Allen; Quartermaster, Frank Weber; Chaplain, William Clendenning; Watchman, Matthew Langell; Lookout, Peter Carson.

THE ARENA FOR FEBRUARY.

The February Arena is probably the most attractive issue of this great reformative and progressive review that has yet appeared. In its 175 pages are found notable papers by Forbes Winslow, D. C. L., of the Royal College of Physicans of London, on "Madness as Portrayed by Shakespeare," "The Land of the Noonday Sun," by Justice Walter Clark. L. L. D., of the Supreme Bench of North Carolina (profusely illustrated). Justice Clark has visited Mexico under the auspices of The Arena to study our sister republic, and this issue contains the opening paper of a series which will be magnificently illustrated. "The Bond and the Dollar," by John Clark Ridpath, L. L. D.; "Bryant, the Poet and Politician," by Frank B. Sanborn; "Personal Reminiscences of Whittier," by his friend, the Rev. Christopher Coffin Hussey (with full-page half-tone illustration of the old Whittier homestead and portrait of Mr. Hussey). "The Government and the Telegraph Monopoly," by Professor Frank Parsons, of Boston University School of Law; "A Half Century of Progress," by Professor Mary Lowe Dickinson, president of the National Council of Women (with full-page half-tone portrait of Elizabeth Cady Stanton), "Scientific Theosophy," by Professor Joseph Rhodes Buchanan, M. D., a scholarly discussion of a problem engaging the attention of a large number of the most thoughtful people at the present time. "The Utopia of Sir Thomas Moore (Part 11) by the editor of The Arena. "Is Women Embodied Obstruction?" by Helen Campbell. The book reviews also are a strong feature of the issue, occupying twenty-seven pages.

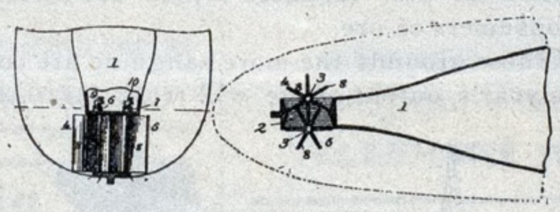
NEW INVENTIONS.

The geniuses of the country seem bent on finding some new plan by which to get boats through the water. Three of the patents issued last week were for propulsion of vessels. One of these, No. 553,416, was issued to James H. Meacham, of Petersburg, Va., and is described



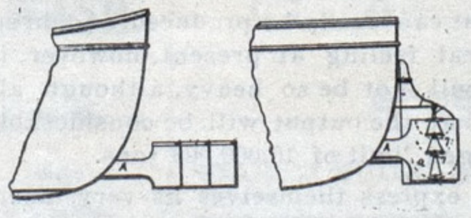
as an Endless Band Propeller. This application was filed on May 10, 1895. The claim is for the combination, in a propeller of the class indicated, with sprocket wheels whose periphery is composed of a continuous series of plane surfaces, each having a tooth or projection, of endless bands having openings to receive said teeth, and a series of paddles attached to the bands, and braces for securing them, which braces are provided on their un dersides with recesses that coincide with the openings in the bands.

Another discoverer of a new method of marine propulsion is Roland Rhett, of New York, who applied July 3, 1895, for a patent (No. 553,423). His device is the combination, with a boat, a casing or wheel-house, two pad-



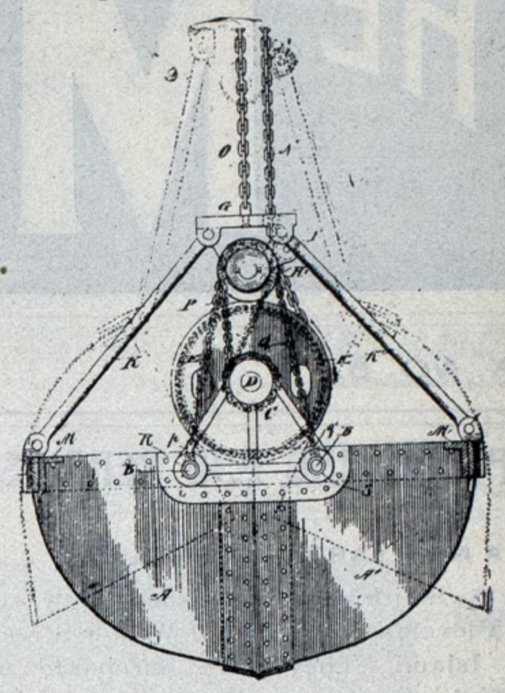
dle wheels rotating partly therein, the blades of which interlock while passing through the wheel-house. These wheels are mounted to rotate on vertical or slightly inclined shafts journaled on opposite sides of the wheel-house, and are entirely submerged.

The patent on the Propelling Mechanism for Vessels invented by Courtland S. Carrier, of Omaha, Neb., (No. 553,333) was applied for June 13, 1894. His claim is for a horizontally reciprocating main driving shaft, a supporting housing at the projecting end of said driving shaft; a series of pivoted blades supported and loosely swaying within said housing in the path of an arc; a series of semi-circular slots within said housing, said slots



at their terminal points extending into the path of said swinging blades; a series of pivoted bars secured to said housing, provided with inwardly projecting arms working within said radial slots, said series of bars being connected by means of toggle rods, and the upper end of said bars being provided with an operating rod; said instrumentalities being so arranged that when said bars are in their central position said blades are permitted to swing unobstructed, but when in either extreme position said projecting arms come within the path of said swinging blades to check the movement of said blades either upon one side or the other.

The celebrated W. S. Bogle Co., manufacturers of clam-shell scoops, are the possessors of a patent (No. 553,256) assigned to them by the inventor, Charles H. Notter, of Chicago, who filed his application August 24, 1894. The claim is as follows: In a hoisting bucket, the combination with a bucket frame, of two bucket sections pivoted at intermediate points of their upper margins to said frame, a head block, arms pivotally connecting the head block to the sides of the bucket sections, a drum journaled on the bucket frame, a hoisting cable having an end made fast to the drum and



adapted to be wound thereon, and closing cables having their ends made fast to the hubs of the drum and adapted to wind thereon, sheaves carried by the head block and over which the closing cables are passed and the opposite ends of the said cables being secured to the bucket frame.

ALPENA'S LAKE COMMERCE FOR 1895

The report of Collector Muellerweiss, of Alpena shows that Alpena does the largest business of any port on Lake Huron. exceeding even Bay City. The report of entrances and clearances is as follows:

ENTERED.	
Vessels entered	589
Tonnage	155 519
Merchandise	8,022
Coal, tons	14,159
Hay, tons	538
Brick	110,000
Oil, barrels	4 515
Rock Plaster, tons	600
Stone, tons	885
Sulphur, tons	250
Pulpwood, cords	890
Oats, bushels	42,850
Corn, bushels	1 400
Logs, feet	18,013 250
CLEARED.	
Vessels cleared	660
Tonnage	170,380
Lumber, cleared feet	132,238,000
Shingles	12,965,000
Lath	9,118,000
Ties	602,144
Posts	684,114
Telegraph poles	8,900
Staves	300,000
Tan bark, cords	100
Pail bolts, cords	1,190
Merchandise, tons	5,717

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD by George F. Stone, Secretary Chicago Board of Trade, January 25, 1896.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Albany	.....	135,000	210.000	.....	57 000
Baltimore	166 000	1,501 000	119,000	106 000	.....
Boston	1,273 000	380 000	12 000	.....	.....
Buffalo	2,738.000	108,000	30,000	456 000	1 569,000
" afloat	259,000	.....	223,000	.....	304,000
Chicago	20 980 000	3 568 000	641 000	254,000	21 000
" afloat	.....	1,618,000	227,000	.....	.....
Cincinnati	41,000	5 000	31.000	36 000	134 000
Detroit	324 000	29 000	15.000	10,000	5,000
" afloat	.....	.....	.....	.....	.....
Duluth and Superior	9,174.000	54 000	714 000	158 000	144,000
" " afloat	512 000	.....	.....	.....	.....
Indianapolis	96 000	101 000	.....	.....	.....
Kansas City	1 534,000	5 000	52,000	27,000	.....
Milwaukee	429 000	1,000	.....	189 000	39,000
" afloat	176,000	.....	120 000	.....	.....
Minneapolis	19 960 000	157 000	534,000	149 000	207,000
Montreal	258 000	7,000	181 000	3 000	44,000
New York	5,933 000	765 000	1,676.000	24,000	194 000
" afloat	841 000	25,000	238,000	.....	228,000
Oswego	9 000	24 000	.....	.....	140 000
Peoria	30 000	512 000	285 000	.....	.....
Philadelphia	497,000	563.000	123.000	.....	.....
St. Louis	1,454 000	393 000	594,000	11 000	10,000
" afloat	.....	.....	.....	.....	.....
Toledo	813 000	472 000	147,000	126.000	.....
" afloat	.....	.....	.....	.....	.....
Toronto	26,000	.....	69,000	.....	39 000
On Canal	.....	8 000	12 000	.....	.....
On Lakes	.....	.....	.....	.....	.....
On Mississippi	.....	.....	.....	.....	.....
Grand Total	67,523 000	10 431,000	6 253,000	1,549 000	3 135,000
Corresponding date 1895	84,665,000	12 654,000	7,982 000	486 000	2 069.000

William H. Webb, the founder of Webb's Academy and Home for Ship Builders, Fordham Heights, N. Y., is getting out an exhaustive work upon American Ship-Building. The book will be fully illustrated.

PIG IRON PRODUCTION FOR 1895.

The complete returns of pig iron in the United States in 1895 have been compiled by General Manager James M. Swank, of the American Iron and Steel Association, and are published in the current issue of the Bulletin, from which the statements and tables below are taken.

The total production of pig iron in 1895 was the largest in our iron-making history, amounting to 9,446,308 gross tons, against 6,657,388 tons in 1894, 7,124,502 tons in 1893, 9,157,000 tons in 1892, 8,279,870 tons in 1891, and 9,202,703 in 1890. The production in 1895 was 2,788,920 tons, or nearly 42 per cent more than in 1894. and 243,605 tons more than in 1890, when our largest previous production was attained. The production of pig iron by half years during the last four years has been as follows, in gross tons:

Periods.	1892.	1893.	1894.	1895.
First half,	4,769,683	4,562,918	2,717,983	4,087,558
Second half,	4,387,317	2,561,581	3,939,405	5,358,750
Total	9,157,000	7,124,502	6,657,388	9,446,308

All the large pig iron producing States share in the greatly increased production in 1895 over 1894. As might be expected, the most notable increase was in Pennsylvania, which produced 4,701,163 tons, or 49.76 per cent of the total production, Allegheny county alone producing 2,054,585 tons, which was 590,796 tons more than the production of Ohio, more than double that of Illinois, and nearly two and a half times that of Alabama; and yet Ohio, Illinois and Alabama made splendid records in 1895 as compared with 1894. Allegheny county made 43.7 per cent of the total production of Pennsylvania in 1895. The Shenango and Mahoning valleys also made remarkably large gains. Stocks of pig iron which were unsold in the hands of manufacturers or their agents on Dec. 31, 1893, and which were not intended for their own consumption, amounted to 662,068 gross tons. June 30, 1894, they had fallen to 517,036 tons; on Dec. 31, 1894, they had risen to 97,688 tons; on June 30, 1895, they had fallen to 439,590 tons; and on Dec, 31, 1895, they amounted to 444,332 tons, a very slight increase over the unsold stock on June 30, 1895. These statistics of unsold stocks of pig iron do not include pig iron sold and not removed from the furnace bank, nor pig iron manufactured by rolling mill proprietors for their own use.

LAKE LITIGATION.

At Detroit, Judge Swan dismissed the suit of Bertha Kinrie, administratrix of the estate of David Kinrie, one of the three members of the tug Torrent's crew killed last July, against the steamer Sitka and schooner Yukon. The suit had been brought under a State statute, providing that liens may be had against vessels for injuries. As the injured person was dead, the court held that action must be brought against the owners of the vessel to which Kinrie belonged, the tug Torrent, and that his court had no jurisdiction.

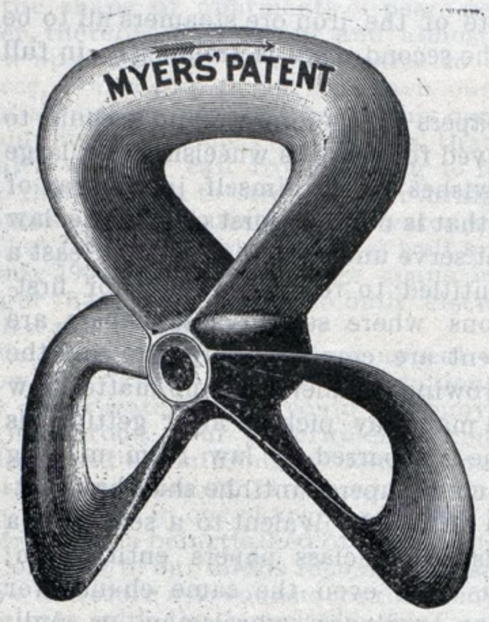
Eddy Bros. & Shaw, of Bay City, owners of the Selwyn Eddy, have brought suit in Judge Swan's court at Detroit, against the Northern Steamship Co. for $2,700 freight money withheld by the defendant on ground of breach of contract. The Eddy was running under a season's charter, but at the latter end of the season the owners refused to let her make another trip to Lake Superior, on the ground that she could not get down again. The Northern Line managers chartered the Globe for this trip and the Globe got back, although the Sault Canal was kept open for her for several days. The freight money withheld was due from the last trip actually made by the Eddy. Judge Swan will have to decide whether or not there was really a breach of contract, and if so, how much of the money the defendant is entitled to retain.

The hearing of the case of the owners of the steamer Burlington against Grant Grummond was concluded before Judge Swan on the 17th and decision reserved. The Burlington burned opposite this city and was towed down below Chappell's and sunk on the bank. The owners abandoned her to the underwriters, and as the latter took no steps to release the boat, Grummond was given permission by the government to remove her. He did this and brought her to the American side and libeled her for salvage. The boat was sold to him by the marshal and he rebuilt her and operated her in the lake trade, when she again burned. The original owners now sue him, claiming he had no right to release the boat without their consent.

Judge Coxe, of the United States District Court for Northern New York, decided last week two cases which have been pendihg since 1893. On October 2, of that year, in the evening the Owego was towing down Buffalo Creek. The Chicago, according to the evidence, cast off her lines as the Owego approached, and tried to get out ahead. A collision ensued which sunk the canal boat W. A. Hedden, owned by Harry Fosbinder, who libeled the Owego, the tugs Babcock and Davis, which were towing her. Judge Coxe dismissed the first three suits, but held that the Chicago was to blame.

THE MYERS PROPELLER—AN ENGLISH IDEA.

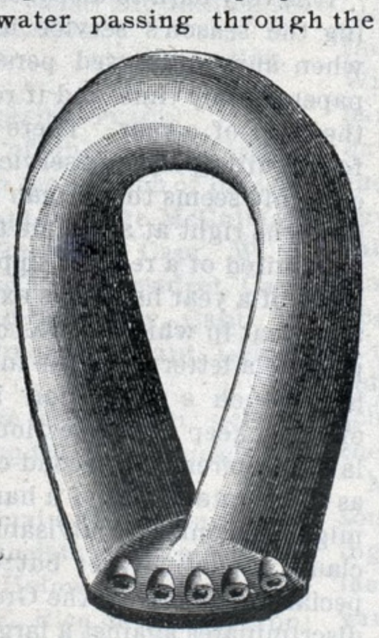
An Eastern gentleman recently stated in the RECORD office, in support of a theory that certain parts of a propeller had no effect in propulsion, that he had known vessels to be docked after long voyages in tropical regions, when it was found that while the edges of the propeller blades had been worn smooth by continual contact with the water, grass and seaweed were found growing in the centre of the blade. The English inventor of the wheel herewith illustrated, Mr. Charles Myers, of Manchester, Eng., late of Glasgow, appears to have formed the same idea. This wheel is manufactured in Manchester, and is said to have proven a success during the three years in which it has been in service. It is claimed that this wheel possesses several patents of advantage over the old style propeller.



THE WHEEL.

The blade is not an old-style bucket with a hole cut in the middle, as might be imagined at first glance, This would cause a wheel to drag, it has been stated, although even this has been contested in some quarters by theorists. It would seem, however, that a large stream of water would pass the edges of the hole at right angles to the blades, retarding them very much.

But the blades in the Myers propeller are practically six in number. Each pair of adjoining blades are placed in echelon to each other as regards the plane of rotation,are united at the periphery by a lateral extension of their outer sides, with an open loop between. The blade is essentially a combination of two blades, each reinforcing the action of the other,and conjointly by the inclined faces about the loop producing true propulsive effect upon the streams of water passing through the loops, and thus driving backwards, with least disturbance, a continuous flow in the line of keel, this being the true test of efficiency.


THE BLAD .

It is contended also that each pair of looped blades, by their peripheral connection, serve to gradually set in motion the column, the pitch of the arch gradually coming up from the fine to the full pitch, thus serving to set the rearward column of water into motion gradually.

It has been held by many that as a rule ordinary propellers have been deficient in surface; but it has not been easy to increase the surface without undue increase of diameter, and thus getting the upper blades into broken water. The Myers propeller claims to solve this difficulty.

The form is apparently one in which the shock upon the water is most gradual, easy, and distributed over a large surface. The tendency to vibration of a blade, supported at only one part to the boss, which is analogous to the leg of a tuning fork, is entirely obviated, it is claimed, by the arched connection of the upper parts of adjoining blades, and stiffness of structure is also given by the disposition of the puncture of the bottom of the plates to the boss in echelon, and at an angle of considerable obliquity to the main part of arch.

TRADE AND INDUSTRIAL NOTES.

The Roberts boilers in the new twin-screw steamer Fulton Market are giving excellent satisfaction.

The little steamship Sythian is being put into shape for a yacht for a New Yorker, by Hugh Ramsay, Perth Amboy, N. J.

It is likely that the New Haven line and the Norwich line will place contracts this year for sister boats to the Richard Peck and the City of Lowell.

The Montreal (Canada) Bridge Company has made arrangements to construct a bridge over the St. Lawrence river from Montreal to Longuenil, to cost about $6,000,000.

The plans have all been prepared for the new plant of the American Weldless Steel Tnbing Company which is to be erected at Toledo, O. As yet, no site has been selected for a location.

At the annual meeting of the Vulcan Iron Works Toledo, O., the following officers were elected: President, A. L. Backus; vice-president, M. I. Wilcox; secretary, John W. Smith.

Mr. A. Wells Case, patentee of the Case Outward Thrust Propeller Wheel, has added to the list of manufacturing agents of this wheel the Lockwood Manufacturing Co., East Boston, and the Gas Engine and Power Co., Morris Heights, New York.

Mr. Frank Morrison, corner Main and River streets, is busy on an order for the compasses and binnacles for the new ships to come out of Wheeler & Co.'s yard next season. His work is of a high character, and is receiving large recognition from nearly all the lake shipyards.

The Berlin Iron Bridge Company of East Berlin, Conn., has completed for the Ansonia (Conn.) Brass and Copper Company a new boiler house 65x142 feet. The side walls are of brick and the roof is entirely of steel, covered with the Berlin Iron Bridge Company's patent anti-condensation corrugated steel.

All the material required in the construction of the two new battleships, "Kearsarge" and "Kentucky," has been awarded to James G. Lindsay & Co., Bullitt building, Philadelphia. The plates were placed at Pittsburg and the shapes with an eastern mill. They have also furnished a portion of the material for the gunboats recently contracted for, aside from considerable structural material to the different shipbuilders for merchant ships.

The Pittsburg Testing Laboratory, Ltd., is engaged in inspecting orders aggregating over 30,000,000 pounds of ship steel for lake vessels, to be built by the Detroit Dry Dock Company, the American Steel Barge Company and F. W. Wheeler & Co., of West Bay City, Mich., in addition to the steel for the new Library and Museum building, Milwaukee, the draw bridge for the Hammond and Blue Island railroad and a water tower for Harman & Evans, Peoria, Ill.

Fannie Furnace at West Middlesex, Pa., controlled by Pickands, Mather & Co., of Cleveland, O., is a "boom" furnace and only remunerative when iron is bringing "boom" prices. To reduce the labor cost and thereby prolong the blast, the men were given the option of working with a reduced force (one front man and one filler on each shift) or have the furnace go out of blast. The request was not an unreasonable one, as the working force was excessive and only previously allowed owing to "boom" times. The men refused to accommodate themselves to present conditions. In consequence of their refusal; the furnace was blown out. The same firm controls the Ella Furnace at West Middlesex and the Alice furnace at Sharpsville, both of which are at present in blast.—American Manufacturer.

The Wisconsin Bridge & Iron Co., Milwaukee, Wis., states that it has the following contracts on hand: Buffalo, N. Y., a 175 ft. lift bridge, 24 ft. wide, two 8 ft. sidewalks, 500 tons; Minneapolis, Minn., Como avenue, riveted highway bridge, 300 ft. long, 24 ft. wide, two 8 ft. sidewalks, 500 tons; Milwaukee, Wis., roof for the new post office, 400 tons, and the iron work for the Milwaukee public library. 800 tons; Great Northern Railroad, Max Toltz, engineer of bridges, two 180 ft. riveted swing spans, 200 tons; Milwaukee & Lake Winnebago Railroad, several bridges, swing and girder types, 600 tons; Wisconsin Central Railroad, about 1,400 spans, 600 tons. Osceola, Wis., a combination highway bridge, 2,000 ft. long, over St. Croix river, having a 240 ft. draw span. The company also has contracts for a large number of highway bridges.

MARINE RECORD

ESTABLISHED 1878.

PUBLISHED EVERY THURSDAY AT 144 SUPERIOR ST., (LEADER BUILDING), CLEVELAND, O.

GEO. L. SMITH, IRVING B. SMITH, - - - - PROPRIETORS.

WILLIAM L. McCORMICK, - - - - EDITOR.

BRANCH OFFICE,

CHICAGO, ILL., - - - - - 238 Lake Street.

THOMAS WILLIAMS, Associate Editor.

SUBSCRIPTION.

One copy, one year, postage paid, - - - $2.00.
One copy, one year, to foreign countries, - $3.00.
Invariably in advance.

ADVERTISING.

Rates given on application.

All communications should be addressed to
SMITH & SMITH,
144 Superior Street,
CLEVELAND, O.

Entered at Cleveland Postoffice as Second-Class Mail Matter.

CLEVELAND, O., JANUARY 30, 1896.

IN reporting the proceedings of the annual meeting of the Lake Carriers' Association,the name of Mr. Henry C. French, of Buffalo, was substituted for that of Mr. John Gordon, of the same port in the list of the Board of Managers. This was partially in error. Mr. Gordon is still a member of this board, to which Mr. French was appointed as an additional member.

CAPT. JOSEPH NICHOLSON, Frank E. Kirby and Capt. J. W. Millen, of Detroit, according to daily newspaper reports, consider their interests in the city of Detroit as so much more extensive than their lake interests, that they will be members of the Detroit delegation which will go to Washington in the interests of the proposed bridge. Gen. R. A. Alger is also mentioned as a vessel man who favors the bridge, but General Alger's marine interests are largely confined to lumber and he was most active last year in fighting proposed legislation in behalf of the proper commerce of the lakes.

THE WOODMAN BILL.

Representative Woodman has introduced a bill which has already caused considerable adverse comment among shipping owners, and which will without doubt be fought to the bitter end. It provides that any vessel navigating the Great Lakes shall be required to carry, if a sailing vessel or tow barge, in addition to its officers, a crew of competent sailors in numbers as follows, according to the size of the vessel: 150 to 200 tons registry, three; 200 to 300 tons, four; 350 to 500 tons, five; 500 to 1,000 tons, six; 1,000 to 1,500 tons, seven; over 1,500 tons, not less than eight. The bill further requires that steam vessels shall carry, in addition to their officers and wheelsmen (who shall be practical sailors), a crew of not less than two such competent sailors for every steam vessel of from 100 to 300 tons registry; 300 to 500 tons, three; 500 to 1,000 tons, four; 1,000 to 1,500 tons, five; 1,500 to 2,000 tons, six; and a sailor for every additional thousand tons or fraction thereof.

The second section provides that no vessel shall receive her clearance until these conditions have been complied with to the satisfaction of the collector of customs; and any vessel entering a United States port on the Great Lakes without so complying shall pay a fine of $25 to $100 for every sailor less than the required number.

The vessel men now smart under the slight delays incident to the observance of custom house formalities, and the enactment of the above into law would produce no end of trouble. There is no provision for any decision as to what constitutes a competent sailor, and the law if passed, would only create confusion without materially benefiting the class in whose behalf it was introduced.

CONFUSING AND UNFAIR.

A number of aspirants for the position of mate or master on the larger steamers have unwittingly embarrassed themselves in the contest for place, by a very natural mistake, due to the confusion in regard to the terms "second mate," and "second-class license," the impression in some quarters being that the latter entitles the holder to the former position. With this idea, which the inspectors at some ports have not, it seems, taken pains to correct, several applicants have stood examination for and secured second-class papers, which, instead of entitling the holder to a position as second mate on a large steamer, gives him license to command any steamer under one hundred tons burden in such waters as may be designated by the inspector who has issued such papers. It will be observed elsewhere on this page that the law and the circumstances require the master, first and second mate of the iron ore steamers all to be first-class pilots, as the second mate is frequently in full charge of the deck.

The second-class papers are therefore of no account to the man who has served for years as wheelsman on large steamers and who wishes to put himself in the way of advancement. But that is not the worst of it. The law requires that he must serve under these papers at least a season before he is entitled to re-examination for first-class papers. Positions where second-class papers are necessary and sufficient are comparatively rare, and the number is steadily growing smaller, and no matter how much information a man may pick up after getting his second-class papers he is debarred by law from making application for first-class papers until he shall have actually served a length of time equivalent to a season in a position to which his second-class papers entitle him; that is, he does not have even the same chance for advancement as an ordinary wheelsman or unlicensed officer. If a man applies for his first-class papers, and does not pass quite good enough examination, he has the option of taking second-class papers or going down as rejected. Strange to relate, the latter is, under existing conditions on the Great Lakes, the preferable alternative, as a rejection debars him from making application for one year only, while second-class papers may prove his bane for a dozen years, if he happens to be unable to gain a year's experience under his license. Of course when second-class papers have been applied and issued through a misconstruction of the law and the facts, the applicant has the right of appeal to the supervising inspector of the district in which the applicant was examined. Such an appeal must be made, however, within thirty days after the issue of the papers, and it very frequently happens that the unfortunate does not discover his mistake until this time has expired.

It is very hard to discover a reason for the law requiring the season's service under the second-class papers. when any unlicensed person may apply for first-class papers at any time, and if rejected may apply again after the lapse of a year. There seems no ground whatever for requiring a year's service under those papers, and it certainly seems that a man securing these papeas, should have the right at any time to secure first-class papers. It is required of a rejected applicant that if after the expiration of a year he stands examination in another district than that in which he was originally examined, he must procure a letter from the inspector originally examining him. Such a regulation is of great assistance in the effort to keep the inspection service uniform; and if the law in reference to second-class papers were so amended as to operate as less of a hardship to holders of them, it might of course be advisable to insert or retain a saving clause of that nature; but the law needs alteration, especially as relates to the Great Lakes, where its operation discriminates against a large class of deserving and competent men.

On a class of lake steamers which do not operate in so much of a hurry as those carrying three first-class licensed men, the second mate is not a licensed officer. Indeed the inspection service knows nothing of any but the "chief mate," and the first and second mates on the large steamers referred to are, as far as the inspection service is concerned, equal in rank. It has been the custom, however, for some of the lake inspectors to interpret the law relating to experience under second-class papers rather according to the spirit than the letter, and to recognize as service under second-class papers the time served as second mate on steamers where only two licensed officers are required. This has done a great deal toward mitigating the effect of an unreasonable law; but that is the greater reason why the law should be amended, as this class of steamers does not grow in numbers, but is slowly decreasing.

ONLY "CHIEF MATES" NEED LICENSES.

Acting Secretary of the Treasury Hamlin has sent the following letter to the collector of customs at San Francisco:

SIR: Referring to your letter of the 24th ultimo, inclosing a communication from Mr, S. G. Naylor, secretary of the American Association of Masters and Pilots of Steam Vessels, requesting to be informed "if the number of mates appearing on a steamer's certificate of inspection, means that they shall all be licensed officers," you are informed that the law, sections 4438, 4440 and 4445, title LII, Revised Statutes of the United States, makes no provision for licensing other than the "chief mates" of steam vessels. If more than one mate is required by the inspectors in their certificate of inspection issued to a steam vessel, only the "chief mate" is required by law to be a licensed officer.

The above decision will not effect any change with the lake steamers, many of whom carry two, and sometimes three licensed officers of the first class, in addition to the captain. They are usually known as first, second, and third mates, but are not so known to the inspection service, the local inspectors stipulating in the steamer's license that she must carry two, three, or four licensed pilots of the first class. In so doing they take into consideration the trade in which the steamer is engaged, and if she is one of the ore carrying fleet, they allow for the short time in port, and count on giving the steamer a sufficient quota, so that no man need be overworked to an extent which will detract from his efficiency, and yet fulfill the requirements of the law that the deck shall always, when the steamer is navigating, be in charge of a first-class pilot. The situation is somewhat different on salt water, where a ship is at least a week in port, and so many licensed officers are not required. But the local inspectors are considered the best judges of the number of pilots required, and no decision as to the number of "mates" can at all affect their authority in this matter. The master of a rapidly moving ore carrier has but a short time to transact his business while ashore, and as he is expected to take his ship in and out of port and through the Detroit, St. Clair and St. Mary's rivers, it is obvious that he cannot be expected to stand a regular watch, and the whole time must be divided into two or three parts, the officer of the deck being relieved by the master when the occasion arises.

THE free ship and repair registry bills offered by the Commissioner of Navigation are being turned down with remarkable regularity and unanimity by the Congressional committees to which they have been referred.

A MISAPPREHENSION:

To the Editor of The Marine Record:

I notice by your issue of this week that the Ship Masters, at their annual meeting, passed a resolution opposing any change in the navigation laws on the lakes, and stating that this was prompted by a bill proposed by Representative Payne.

These gentleman were entirely mistaken, as Senator Payne's measure does not affect the Great Lakes, operating under the White act of last year, which it does not not in any way amend.

I should be pleased if you would, through your valuable columns, remove this misapprehension.

Respectfully yours,
EUGENE T. CHAMBERLAIN,
Commissioner of Navigation.

Washington, D. C., January 25, 1806.

INTER-LAKE YACHTING ASSOCIATION.

A meeting of the Inter-Lake Yachting Association was held at Toleds Saturday evening, at the office of Commodore John Elumchel. Others present were Capt. E. W. Radder, of Cleveland; Commodore George T. Bliss, of Erie; John Holloway, of Put-in-Bay; George Williams, of Sandusky; Henry Tracey and Frank R. Tracy, of Toledo; and E. P. Edwards, of Buffalo.

The Detroit and Bufialo yacht clubs were admitted by unaminous vote, and it was decided to hold the next meeting in Detroit, February 12, when a new commodore will be chosen. The racing committee presented a report providing regatta regulations and defining the duties of the regatta committee, which was adopted.

THE GRAND LODGE OF SHIPMASTERS.

(CONTINUED FROM PAGE 3)

counts, and how well the grand treasurer had guarded the funds. He said he had had the same experience with the ritual that his predecessor had, and suggested more careful memorising of it.

GRAND SECRETARY'S REPORT.

The report of Grand Secretary W. A. Collier, of Cleveland, showed a steady growth of the organization and an encouraging condition of finances. The membership was about 520, or nearly 60 to each lodge. Death claims to the amount of $10,000 had been paid last year, and on December 31 there was a balance in the treasury of $608. The receipts in the general fund were $3,651.01, and the disbursements $1,662.13, leaving a balance in the Treasury of 1,988.88. The only unpaid obligation was one death claim.

PATROL OF THE SAULT.

Early in the session the following was offered:

Resolved, That the navigation of the St. Mary's River is dangerous on account of its length, unavoidable feuds, and narrow dredged channels, it being for 22 mi'es only 300 feet wide, with five miles of Hay Lake, this making a total of 27 miles. In this dangerous channel there occurred, during last season many costly collisions. We fear that with the large increase in the number of boats, and their increased speed, under present manner of navigation in the channel the collisions will increase. The great danger to life and property compel us to ask for some regulation of navigation in this channel.

G. W. McCullagh, C. M. Davis, J. A. Holmes, H. F. Loftus, Henry Root and F. D. Welcome were appointed a committee to act with the Grand President in preparing a more extended expression of opinions. Later this committee reported a set of resolutions substantially the same as those adopted at the annual meeting of the Lake Carriers' Association, and added the following:

This matter can be regulated by the government, which is making these artificial cuts by dredging, and which should regulate the passing of all craft and rafts using the same. It should make such regulations as will keep navigation free from danger to life and property.

Your committee recommends that a committee of your Ship Masters' Association call upon the Treasury Department ann solicit them to establish such suitable, practicable and safe regulations, and provide the necessary number of its officers to enforce the same at all times during the entire season of navigation.

THE RAFTING QUESTION.

Captain A. J. McKay, Henry Root, and W. S. Mack formed a committee to which was assigaed the matter of rafting abuses. They report as follows:

1—That the past season the large rafts that were used through our rivers werc a constant dread to masters of leve steamers and a fearful menace and source of dread to masters having the boats in tow.

2—The law permitting large sack rafts, filling up the whole navigable channel of our rivers; the delay and damage this has caused to owners is, to say the least, very unreasonable and unfair on the part of the raft interests. Laws are strictly enforced against our steamers if infringments of navigation rules are reported, while these rafts are permitted to be moved in sizes so large as to practically stop the passage of our boats.

3—We hope that your grand body will do all in their power to prevail on the government to be fair to the craft that navigate these rivers by framing such laws as will compel the owners of these rafts to make them of the size that will give half of the channel to other craft that are compelled to pass these slowly moving objects; and that perhaps, too, in a down current, in a channel so narrow that other craft cannot stop or turn around. This leaves our steamers the alternative of going on the rocks or ashore, causing great expense. Innumerable cases of this kind have occurred, and the danger stares us in the face every day during the season of navigation.

DETROIT RIVER BRIDGE.

Capts. Duncan Stalker, F. D. Welcome and Robert Young were appointed a committee to make recommendations in connection with the effort to bridge Detroit river by placing piers in the water. Its report in full was as follows:

To the Grand Body of the Ship Masters' Association:—

Your committee beg leave to report as follows:

1—We submit the following preamble, as masters and pilots of craft continually passing and repassing up and down through the Detroit River in some cases 70 times a season, in all kinds of weather. This particular channel is always crowded with moving craft in all parts of the river, the sides near the Canadian shore being a favorite place for some, the middle for others. It is difficult for us to navigate. First we pass one, then another passes out when it is hard over the wheel, this way and that; this danger is increasing every day as the fleet craft increases in our inland waters, and from all points must pass here in this narrow strait.

To augment the very serious danger that did not exist formerly for navigators, large glaring electric lights are now shining on each side of the river, causing shadows and glares to fall here and there, so that no man can with certanty tell just what an object is or where it is. This, with the smoke of the city and mists and darkness, rains and snows that, as you know, occur so frequently that to navigate with safety the vast and expensive fleet that we have requires the utmost vigilance, and the terrible nervous strain that is attached to this work is wearing us out before our time. We sincerely hope that your honorable body wi'l seriously look fairly and honestly at this matter, and do all that is possible to keep these obstructions (piers for a possible bridge) out of the passage. We say fairly, because Detroit River is a natural highway of commerce, made so by the Creator. It is made very narrow for the vast amount of traffic that is continually passing in both directions. We are humble servants guiding the fleets engaged in this traffic, and to do this safely requires the utmost care and watchfulness.

To multiply the danger by placing huge obstructions in the shape of abutments or peers near a bend of this river, thereby shu ting out and almost obstructing the view up and down, is an injustice to our marine commerce, a hardship to us who earn our livelihood, and subsistence for our families, in this our chosen vocation, simply to save some corporations that have unlimited wealth at their call from putting a few more dollars into their project to stretch their bridge from shore to shore, so as not to obstruct our water way.

That this is the only reason is well known. The river is only 1900 feet wide; bridge spans can be built much longer than that, and are so built elsewhere, where no such a numerous fleet ply.

We are honest in this our appeal to you, for we do know the danger of such obstructions are more than any under water, which could be buoyed. This would be monstrous. Our government is continually helping us by spending millions of dollars annually to remove obstructions from our rivers, so that we can safely navigate the craft in our charge; and now that a dangerous obstruction is being talked of to put in this most dangerous place is to our minds incomprehensible.

We therefore ask your honorable body to at once communicate with the honorable chief eugineers and the Department of War, placing this before them for their perusal.

WEATHER BUREAU APPRECIATE.

A committee was appointed to communicate with the chief of the Weather Bureau, and express the appreciation and thanks to the members for services rendered last season. The letter drafted is as follows:

Prof. W. L. Moore, Chief of Weather Bureau:

Our Grand Lodge of the Ship Masters' Association, now in session at the city of Washington, wish in this way to tender to you our sincere thanks for so kindly placing at the disposal of Masters of the Lake Marine the use of the telegraph at the Bureau's expense, to get information valuable to them at times. This is of incalculable value in finding out the direction of severe storms, and we know that many, many lives have been saved, and also much property saved from damage by this privilege. Your placing at Detroit weather maps and warnings was, in our minds, a wise measure. We hope you will continue them in this place, and also extend this valuable service as much as you can possibly due on our western lake, as our navigation is so dangerous, with its narrow rock-bound coast and limited sea room.

GEORGE MCCULLAGH,
HENRY LEISH,
J. A. WARD,
} Committee.

NEW OFFICERS AND MEETING PLACE.

The last day's session (Friday) of the Ship Masters' Association was devoted chiefly to the election of officers, as follows: Grand President, Capt. George McCullagh, of Detroit; First Grand Vice-President, Capt. W. S. Mack, of Cleveland; Second Grand Vice-Presideet, Capt, W. E. Rice, of Port Huron; Grand Secretary, Capt. W. A. Collier of Cleveland; Grand Treasurer, Capt. Lyman F. Hunt, of Buffalo.

The next annual meeting of the association will be held in Washington, beginning on the third Tuesday in January, 1897.

The committee appointed to remain at Washington to look after legislation matters consists of Capts. C. E. Benham, W. S. Mack, and J. A. Holmes, of Cleveland; Chas. L. Wilson, of Detroit; W. E. Rice of Port Huron; Frank Welcome Buffalo, and Henry Leisk, Milwaukee.

LETTING WELL ENOUGH ALONE.

The members of the Lake Carriers' Association who are most interested in the coal carrying and fueling question, after giving the matter careful consideration, have tacitly agreed to let the Buffalo agreement of last year stand for the coming season, and not to try to extend it to Ohio's soft coal ports, where fueling arrangehave already been made by several parties at $215.

Commander Nicol Ludlow, U. S. N., who is now on waiting orders in Washington, will be assigned to duty on the steel board and will probably be made president of the board later on.

LAKE BUILT OCEAN YACHT.

(CONTINUED FROM PAGE 3)

a wash room. The cabin seats are made to draw out for use as beds during a cruiser.

The engine is a fore-and-aft compound, with cylinders 7 and 14 by 10 inches, fitted with Marshall's reversible gear. The cylinders are close together, the engine being only 32 inches long. The working parts, including the crank and shaft, are made from forged steel. The boiler is of the water-tube type originated by the builders. The steam coils are made from 1¼ inch pipe, extra heavy, taking water from a four-inch double thick manifold pipe running all through the bottom, from thence leading to a steam pump 20 inches in diameter by 6 feet long. The boiler will weigh 6,800 pounds, holds three barrels of water in steaming order, and is tested to 400 pounds cold water pressure. It will be allowed 175 pounds steam working pressure, and will occupy a space 4 feet 9 inches wide by 6 feet long and 5 feet 2 inches high. It will be fed by a Worthington duplex feed pump and one injector. The machinery will exert 180 h. p., and is expected to drive the Miltonian 14 miles per hour. She is to be completed in June, and Mr. Knopf is building a boat house 30x80 feet, to house the yacht, provided with lifts, to hoist her out of the water.

GENERAL REPAIR WORK.

CLEVELAND—The steamer S. S. Curry, finished her extensive repair job and left the Ship Owners' dry-dock Wednesday night. The Pioneer and a tug were then placed in the dock. The Wallula's repairs will be finished so she can leave the dock early next week.

The Grecian finished her repairs and got out of the Cleveland dry-dock, and the Aurora is now in for calking up to the light water line, some new bottom planking, etc. The tugs Pinola and Sea Wing were in for an overhauling

The Cleveland Shipbuilding Co. are putting a new boiler, 14x13 feet, in the Wm. Chisholm. They will also put new boilers in the Spokane. They are replacing with steel the wooden decks over the engines of the Marina, Manola and Matoa.

CHICAGO.—At the Chicago Ship Building Co.'s yard the Chili is in dock for several new frames and plates.

At Miller Bros.' shipyard the steamer Parnell is in dock for some new plank on her botton, a new shoe and a new Trout wheel; the steamer Kittie M. Forbes is in for some new plank on her bottom, the steamer John Emory Owen was in and had her rudder shipped; the fire boat Fire Queen received a new stem and bow and some new rail.

Business is very brisk with repair work at J. B. Bates & Co.'s shipyard. The schooner Emma C. Hutchinson received new deck beams, decks and hatches and a thorough recalking all over. The schooner Annabel Wilson is receiving new deck beams and decks and hatch coamings and two new masts; the Uganda is having her topsides recalked. The Germanic is being thoroughly refastened. The D. C. Whitney is receiving new stringers and rail, new upper deck, and topsides recalked. The steamer New Orleans is receiving new planksheer, stanchions, and rail and solid quick work and recalking inside and out. The steamer Iron Duke is receiving five strakes of new plank around her top sides, new deck forward and top sides recalked. The schooner H. A. Hawgood is receiving a new cabin, and the schooner John Martin a new rudder stock.

MILWAUKEE.—The W. H. Wolf which is in dock at the south yard, is receiving considerable new bottom planking, made necessary by a touch-and-go damage received last season. The F. L. Vance left the dock at the west yard Friday, after being thoroughly refastened and the S. F. Hodge went in to stop a leak, and is receiving a good deal of new iron sheathing.

STURGEON BAY.—Leathem & Smith have erected a temporary sawmill for getting out the timbers necessary for the extensive repairs being made on their boats this winter. The work of removing the huge wooden arches from the Hurd has been completed, and the steamer's appearance is greatly improved. Work will soon begin on the repairs to be made to the schooner H. C. Winslow. The oak timber and planking are now being sawed out.

The Mutual ship building at the Globe shipyard, Cleveland, is to be launched early next month.

NATIONAL M. E. B. A.

The Marine Engineers' Beneficial Association of the United States convened in its twenty-first annnal session at Willard's Hotel, Washington, at 9:30 o'clock on the morning of of Monday, Jan. 20, the meeting being called to order by National President George Uhler. The report of the committee on credentials showed the following members present: H. T. McAuley, and C. M. Stoddard, from No. 2, Cleveland; Edmund Dungan and Edward Blanchard, No. 3, Detroit; Thomas F. Dowd, George Grubb, No. 4, Chicago; Edward Jordan, Wm. Shaffer, Otto Boettger, No. 5, New Orleans; J. C. Collins, No. 9, Milwaukee; Lewis McAllister, Samuel Hall, No. 13, Philadelphia; J. J. Williams, No. 15, ——; P. L. Leahy, J. J. Harrison, J. J. Johnson, George W. Rouse, W. J. Dubois and D. E. Hammond, No. 33, New York; J. J. Searey and F. A. Jones,No 35, San Francisco; Frank Parker, proxy for No. 43, Port Huron, Mich.; Frank Parker, No. 53, Marine City, Mich; Robert McMurray and John T. Cook, No. 59, East Boston, Mass.; N. S. Lawrence, No. 62, New London, Conn.; Charles Ellis, No. 63, Albany, N, Y.; J. J. Harrison, proxy for No. 64, Jersey City; Hugh Ferguson, Jr., No. 65, Charleston, S. C.; J. C. Collins, proxy for No. 77, Manitowoc, Wis., Andrew McGillvray, Mo. 78, Duluth, Minn.; A. J. Irwin, No. 85, Alpena, Mich.; Patrick Roach, No. 91, Ashtabula, O.; John Henry, No. 92, Saginaw, Mich.; C. W. Robinson, No. 93, Washington, D. C.; J. F. Godwin and Thomas Kendall, N0. 101.

The chair appointed the following representatives to serve during the session; Representative Kendall, conductor; Representative Roach, doorkeeper; Representative Ellis, assistant national secretary; Representative McAllister, past national president.

After opening the session according to the ritual National President Uhler delivered his annual address, dealing exhaustively with his labors for the past year, and copies were distributed to the delegates. National Vice President John J. Searey and National Secretary Thomas F. Dowd also submitted their annual reports, which were printed in pamphlet form for distribution.

The national president then introduced Commodore George W. Melville, Chief of Engineers, U. S. N., who is a member of the order. He addressed the meeting at some length, saying in part:

I am not only glad to see you at this end of the avenue and in this building, but I am glad that your influence is felt at the other end of the avenue, in the Senate and House of Representatives. I believe you have there a very good friend in Senator Squire, of the State of Washington, and who will stand up as a soldier and be shot, if necessary, to accomplish the right and to assist in the accomplishment of your purposes before Congress."

Commodore Melville then mentioned Senator Squire's bill, which is similar to that introduced in the House of Representatives by Representative Hopkins, of Illinois, the substance of which was printed in the RECORD January 9. It provides for the recognition of marine engineers as officers on vessels, and in consequence prohibits aliens from serving in such capacity. He then continued:

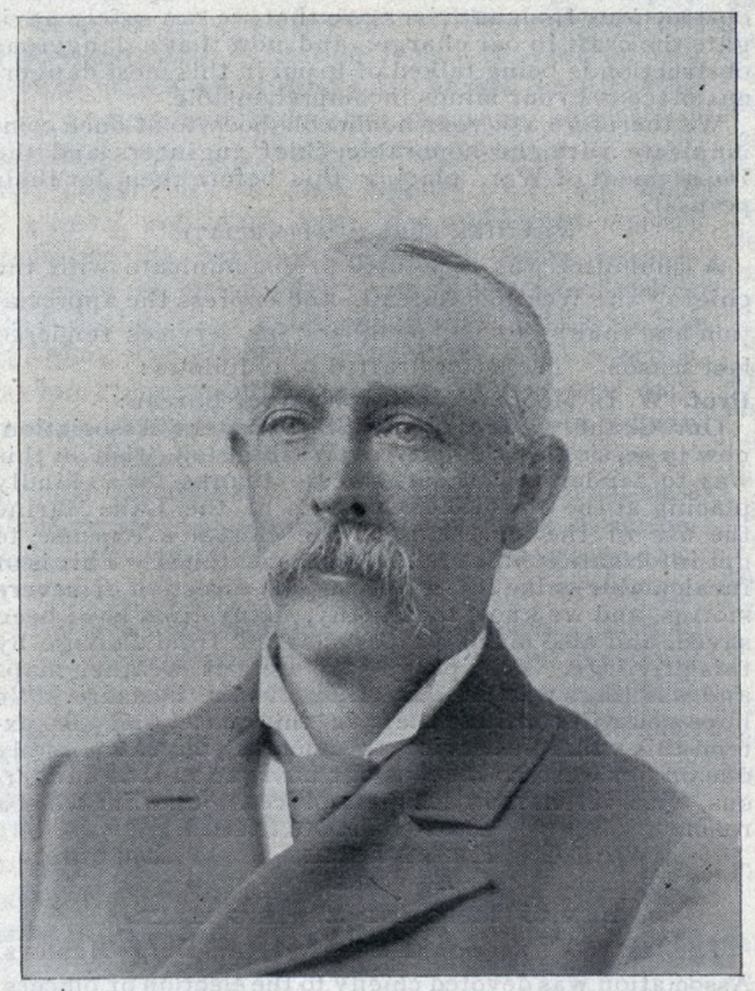
Now, gentlemen, I have been hammering at this matter in Congress for many, many years. For years, as Engineer-In-Chief of the Navy, I have been trying to get appropriations to carry on the work, trying to raise the standard in our corps in the navy, and I know pretty well how things drift. As the President was absent, I took the matter into my hands, and in talking this matter over with others, I finally reached the conclusion that if our friends, the enemy, would make opposition to the passage of this bill, it would have a good effect. There are men in the Senate and House of Representatives, who do not know whether we may or may not be able to handle our ships at sea. But when such men get to criticizing us, that puts a hammer into the hands of the enemy to pound us with. So I took the liberty of saying I would be responsible to Mr. Uhler, and if by so doing I have put any hammer into the hands of the enemy to strike me a blow with, I am a young man and able to stand it. (Laughter and applause.) I said it is much better to suffer this evil a year longer than to have it knocked out on a technicality. It is much better for you to adjust your little differences, and every man-Jack of you fall to work as brothers. Do not sit idle, doing nothing; but every man of you should bring pressure to bear on somebody to advocate your cause. You are asking for nothing but what is absolutely right, and stand forth and let everybody know we are going to fight for what belongs to us! (Great applause.) Beg for nothing; ask for your just dues! The man who prays and begs gets nothing. Make your demand, and you shall have it! (Great applause.)

Senator Watson C. Squire was introduced and gave a few interesting facts in connnection with this bill. In its preparation his principal assistant was Chief Engineer John R. Edwards, whose exposition last summer of serious errors in naval construction in connection with the new navy caused such a commotion in the Navy Department. He continued:

I further wish to say that I feel proud, as an American citizen and an American Senator, that we have such able men, to say nothing about the question of their distinction—they are distinguished, all of them, men of marked ability in their chosen profession and calling—such men as Commodore Melville and the assistants under his command whom I have met. * * * I am sure I express—for I have the token of your applause—the deep degree of appreciation that you entertain for these men, and it is a proud feeling with me, too, that these commercial marine engineers, represented by the members of your body, are in such close affiliation with the engineers of the United States Navy. That is as it should be; you are brothers, I might say, in the same general profession. * * *

As I understand, gentlemen, the first great object sought in this legislation is this: That the officers of the engineers of the navy, in connection with the commercial marine of the United States, shall be American citizens. That is the first substantial groundwork upon which to build. That is right. It is right as a matter of justice to you. Again it is right, in view of the fact that these vessels—notably those belonging to the great American Line—may be brought into the service of the United States government as war vessels. That fact appeals at once to every man's sound sense. That is the bed rock on which to build. That is the foundation stone of all your efforts, as I understand it. And in that respect I believe you will have the American Congress behind you. You deserve to have it.

Nor can I understand, for the life of me, how it has been that in the past the Secretary of the Treasury or



CAPT. GEORGE F. BABCOCK.

the Attorney General of the United States could have placed a construction upon the existing law that should apparently to my mind, disregard its present terms. I know that at times it is thought necessary to strain a construction. I suppose in war times we might perhaps strain a construction as to the provisions of law. But in a time of profound peace, to strain a construction of this kind, when the very purpose of the law is to secure the employment of Americans as engineers, how under such circumstances, the terms of the law have been differently outlined, is beyond my comprehension. * * *

But there are other questions: The question as to whether you shall be deemed officers under the provisions of the law. That is a point that comes right home to you; one that appeals to your pride; one that appeals to your sense of right and in that respect I cannot conceive it possible that you will neglect your interests. I believe you should have your rank in the command of the vessel, or in the department which is to be under your control, as officers. I believe a fair construction of the present law will give you the right, and certainly, I believe, we ought to make it clear, if it is not already clear.

Then as to the terms of your licenses I understand that at present your licenses are simply for one year, subject to renewal, and perhaps that renewal may not be granted. Sometimes for reasons that are good and sufficient; perhaps for reasons that partake to some extent of partiality, of favoritism, or of inadequate appreciation of the merits of the engineer who has for years performed his duty as such, has adopted it as his calling, his life work, and then is likely to be thrown out of his position and work in his profession by the action of some local board. I believe that no man should be deprived of his license except for cause; that that cause ought to be properly established before the supervising engineer of the United States Navy; that the man who has charges preferred against him should be advised of them and have an opportunity to defend himself against them. I believe the bill does make that provision. I believe that the licenses should continue for a period of five years and be subject to renewal. I am told that in other countries the commercial marine engineers hold their licenses for life, or during good behavior; and I believe the American government can afford to be just as fair and impartial to its engineers, to accord to them their just rights, as any other government. I believe the qualifications of our American engineers are fully equal, if not superior, to those of the marine engineers of any other country on the globe. [Great applause.]

Hon. Samuel C. Hyde, Representative in Congress from the State of Washington, then addressed the engineers briefly.

At the second day's session a movement to alter in some of its features the Squire bill was rejected, and the original bill sustained in all its features. Reports of local associations were read, after which Representatives McAuley and Stoddard, of Cleveland, offered a resolution for immediate consideration, which provides that associations on the Great Lakes shall hold their annual election of officers at the first regular meeting in January. It was adopted.

The national president and Representatives Jones, Grubb, Harrison and Stoddard were appointed a committee to wait upon the Grand Harbor of Masters and Pilots, then in session, and to confer with them in regard to pending national legislation.

M. E. B. A. No. 92, of Saginaw, Mich., sent in a communication setting forth the need of some restriction in the present methods of obtaining licenses, and urging the enactment of law providing that all applications for marine engineers' license must be signed by three engineers who must be in actual practice at the time of signing such application. The communication was referred to the legislative committee.

George P. Wilson, William Shaffer, and P. L. Leahy, a committee appointed at the last convention, Jan. 23, 1895, to prepare and present to Hon. George W. Melville, Engineer-in-Chief of the United States Navy, a certificate of honorary membership, reported that they had performed that duty, and were formally thanked. On motion, the Board of Supervising Inspectors were invited to meet with the convention during its session.

At the third day's session John R. Edwards, Chief Engineer, U. S. N., addressed the meeting on the general usefulness of the M. E. B. A. to the general government, in time of war. Mr. Edwards dwelt on the possibilities of the organization and the influence it might sway were the members cognizant of the power of the organization. The meeting was also addressed by Past National Vice-President E. P. Watson, editor of The Engineer, Past National Secretary Harris, National Vice-President Searey, and National President Uhler.

At the business meeting the following officers were elected for the ensuing year: National President, George Uhler, Philadelphia; National Vice-president John J. Searey, of San Francisco; National Secretary, Thomas F. Dowd, of Chicago; National Treasurer, J. J. A. Williams, of New Orleans. An Advisory Board, consisting of Messrs. Wm. F. Yates, of New York; Wm. Shaffer, of Baltimore, and —— Wilson, of Philadelphia, were elected to confer with the national officers in case of emergency and to arbitrate any disputes that might arise.

The representatives attended a banquet which was tendered them by Washington Branch No. 93, on Thursday evening Jan. 23, and enjoyed the evening with wit, wisdom and wine.

ANOTHER TUG LINE CHANGES HANDS.

Capt. Jay Hursley, of Sault St. Marie, has disposed of his tug line to the Thompson Tug Co. of Port Huron. The line comprises the tugs L. D. Smith, O. W. Cheney, L. Dimick and Mary Virginia. The terms of the sale have not been made public. Manager C. D. Thompson expects to continue to operate these tugs at the Sault, and will probably continue the former managing force in charge.

THE MARINE RECOBD is the repository for all engineering and nautical publications. Hydrographic charts always on hand.

THE LAKE FISHERIES.

LEGISLATION FOR OHIO DEALERS.

Hon. H. B. Vincent, president of the Ohio Fish and Game Commission, with Messrs. L. K. Buntain, of Dayton, O., and W. R. Huntington, of Cleveland, deputy game wardens, met at Sandusky last Thursday with a number of the representative pound and gill net fishermen of Northern Ohio, for the discussion of the best manner of regulating the fisheries by laws to be passed by the Ohio General Assembly, now in session. Most of the day was devoted to discussion, as the interests of the pount-net and gill-net men are often opposed. It was finally agreed, however, that the law should provide for a closed season extending from December 15 to March 15 of each winter. Fifty feet was fixed upon as the least depth of water in which gill-nets should be placed. This was at first made sixty feet, but a reconsideration was secured, as, owing to the shallow depth of Lake Erie, this would shut the gill-net fish men entirely out of certain localities.

It was also agreed that the law should require that no fisherman shall have in his possession saugers less than ten inches in length; pickerel, blue pike and black bass, 12 inches; grass pike, 18 inches; whitefish, 17 inches; and sturgeon, 3½ feet. All fish smaller than these specified lengths shall be released alive immediately when the nets are lifted, and returned to the water. If any dealer is found to have in his possession fish of the prohibited sizes in a quantity in excess of 5 per cent of the day's catch, he shall be held a violator of the law, and shall be subject to penalties to be prescribed in the law, which will probably provide for placing an inspector at each port. A committee consisting of Capt. Post, of Fairport, John Monson, of Cleveland, L. A. Ranney, of Lorain, E. D. Nichols, of Vermillion, C. Scott, of Huron, A. J. Stoll, of Sandusky, W. E. Bense, of Port Clinton, and John Kelting, of Toledo, was appointed to assist the fish and game commission in the preparation of a bill in the lines indicated at the meeting. The new bill will be prepared as soon as possible and presented to the legislature for early enactment, as it is desired to make the law effective April 10.

PROPOSED LEGISLATION IN MICHIGAN.

A meeting of the Michigan Fish and Game Protective League was held at Lansing, Wednesday. Judge S. W. Vance, of Port Huron, president of the League, was unable to be present, but sent his annual address, which was read. After paying considerable attention to deer hunting the society formally expressed its regret at the failure of the last legislature to enact the fish and game bills prepared by the league. It was also recommended that prosecutions under the fish and game laws should be made in circuit court, to remove them from local influences. Messrs. A. R. Avery, of Port Huron; W. S. Humphrey, of Saginaw; J. H. Bissell and R. J. Cram, of Detroit; and H. A. Wyckoff, of Pontiac, were appointed a committee to frame legislation restrictive of fishing, and it was recommended that they draft bills providing a closed season for black bass, and prohibiting net fishing of every kind in the Detroit, St. Clair and St. Mary's rivers, Lake St. Clair, the channels of Les Cheneaux Islands, and for a reasonable distance from the head and foot of each of the rivers named. President Vance was elected for another year.

MARINE RECORD Life Savers' Series.

CAPT. GEORGE F. BABCOCK.

(SEE OPPOSITE PAGE).

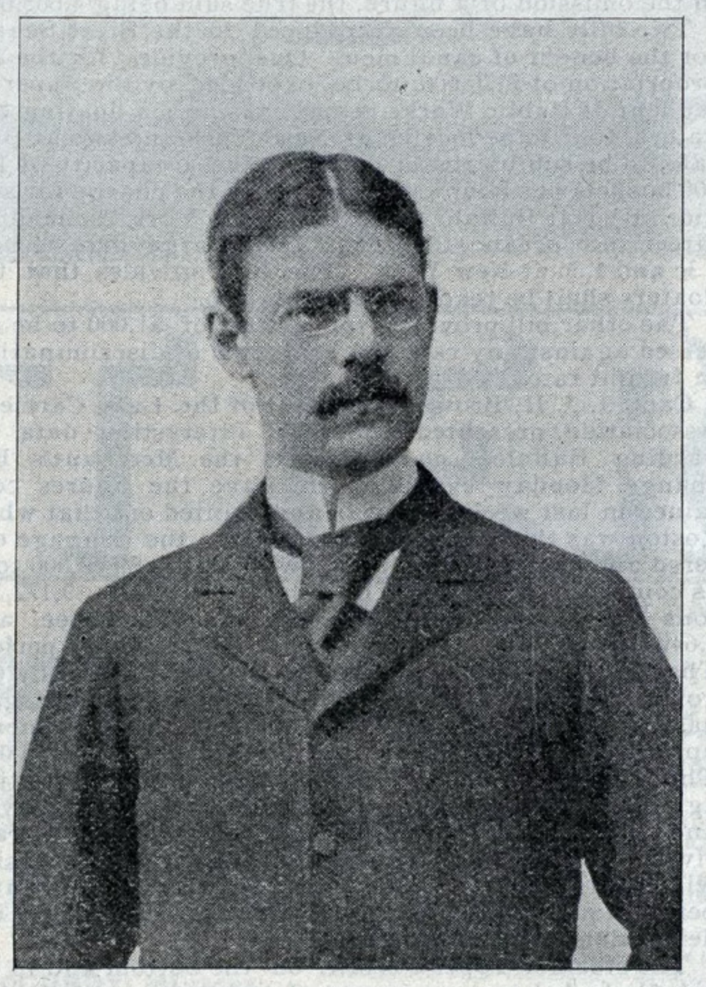
The subject of this sketch is not a venerable looking man, yet he has been with the United States Life-Saving Service since its establishment on the Great Lakes. Capt. Babcock was born on a farm, but early in life took to water from a natural love of it. His first aquatic exploit was at the age of eleven, when he rescued a playmate from drowning, the rescue being, to his sober and more mature years, little short of miraculous. He soon afterwards started out for himself, and sailed for several years, working his way up to positions on the largest class of vessels then sailing. At the age of 15½ years he helped to man a life-boat and rescue a crew from a stranded vessel near the harbor at Fairport.

On July 10, 1871, he was appointed light-keeper at Fairport, which position he held for seven years. In 1876, when the first life-saving stations were established on the Great Lakes, an equipment was stationed at Fairport, and he was appointed keeper with instructions to organize a volunteer crew. He continued for two years on this double duty, and in 1878, when a paid crew was stationed at Fairport, he gave up his light house work and confined himself to the life-saving service. Capt. Babcock is a little over fifty years of age, and has spent nearly twenty-five years in the service of the United States Government.

PUSHING A GOOD THING ALONG.

Mr. A. Osier, lake representative of DeGraw, Aymar & Co., 34 and 35 South street, New York, was in Cleveland late last week on his first trip of the year. Mr. Osier and his firm are large participants in the era of prosperity which has returned to the Great Lakes. In addition to an increased trade in cordage, etc., they have sold nearly sixty of Tyzack's Vulcan (stockless) anchors for new boats, including a few which were launched last summer, and most of those now building in lake shipyards.

Including these there are about ninety of Tyzack's anchors, weighing from 3,000 to 4,000 pounds each, in use on the large lake craft, and this number will probably soon be increased to 100 by the closing of orders still pending. Beside these large anchors, Mr. Osier has sold



LEWIS J. NIXON.
Manager Crescent Shipyard, Elizabeth, N. J.

nearly a hundred little fellows, the smaller sizes of this anchor being peculiarly adapted to yachts and other small craft.

IT'S THE HAPPY COMBINATION.

Mr. A. Wells Case, patentee of the Case Outward Thrust Propeller Wheel in writing to the RECORD in reference to his recently inserted advertisement, says: "I am having a good many calls for wheels now, and expect a rush this spring. Is it advertising in your journal that brings the business, or is it the merit of the wheel?" Both, Mr. Case, both. A good thing is very slowly introduced without advertising, and while advertising sometimes sells a poor device for a time, the results are more telling and permanent if the article advertized accomplishes just what is claimed in the advertisement.

"HOME STUDY."

This is the title of the opening number of an extremely bright and instructive journal published by the Correspondence School of Technology of Scranton, Pa. Its articles are thoroughly written and well illustrated. It contains departments on Architecture, Heating and Ventilating, Geometry, Popular Science, Civil Engineering, and Mechanical Drawing, paying especial attention to instructions in this latter department. Correspondents sending in queries are answered in a careful, painstaking manner. replies being illustrated with diagrams where necessary. Electricity and mechanics are also given considerable attention. "Home Study" is a monthly, and is well worth $1.50 per year to any young man.

A DOWN-EAST SHIPBUILDER.

Mr. Lewis Nixon, who has already reached a place in the front rank of United States shipbuilders, is not yet 35 years old, but is not only at the head of his profession as a naval architect, but is managing the Crescent shipyard, Elizabeth, N. J., and has now a high standing with the Navy Department as the designer of the new United States battleships Indiana and Massachusetts and the armored cruiser Columbia. He was superintending constructor at Cramps for four years while these vessels were laid down and put in frame.

Mr. Nixon was graduated at the head of his class from the Naval Academy in 1882, and was selected by the Navy Department to be sent to the Royal Naval College at Greenwich, Eng., for a course in naval architecture and marine engineering. He was graduated there in 1885, having been appointed a naval constructor in the United States Navy in 1884. The Royal Naval College, which has the highest standard in the world, has declined to accept any more American students.

Three months after Mr. Nixon had been assigned to the New York Navy Yard under Constructor Wilson, he produced a design, which, on the basis of two-thirds the size of English first-class battleships, was pronounced to be the most efficient fighting machine afloat. The successful trials of the Indiana speak sufficiently for the plans.

Mr. Nixon leased the Crescent Shipyard early last year from Samuel L. Moore & Sons, and has associated with him J. J. Conway, an ex-naval officer; Arthur L. Busch, superintending instructor; Charles Cramp Bowers, superintending engineer; and Mr. Mather, late of the United States Navy. Mr. Bowers is a nephew of Mr. Charles H. Cramp.

Mr. Nixon enjoys the distinction of being the first coast shipbuilder to successfully bid lake work away from lake builders. It will be remembered that he was awarded the contract for the construction of ten barges and three steamers for the Cleveland Steel Canalboat Co. THE RECORD is reliably informed that Mr. Nixon's figures were far below those of any lake bidder; but lake builders are all in a position to be pretty independent just now, so it is possible that this episode may not be repeated for a long time to come.

Mr. Nixon was invited to address the Philadelphia naval militia recently, and reviewed the history of the battleship plans which has won him so much fame. He told how the Secretary of the Navy sent him back twice with the plans, so as to secure a ship that would beat anything in the world, regardless of the size of the vessel. Speaking of the Texas, Mr. Nixon said that the weaknesses which had been developed could be remedied, and she would then be a most efficient vessel. He regarded the dynamite cruiser as one of the most formidable vessels in the navy from a moral point of view, and deprecated the suggestion that she be altered into a torpedo chaser. If there should be any trouble he thought the Vesuvius would probably play an important part.

Touching on the matter of trial trips, Mr. Nixon said that in England dependence was placed on patent logs and spurts of one or two miles. "There can be no jockeying over an 80-mile course, such as our vessels have to go over on their trials," he said. He told how Admiral Hopkins, after going with him over the New York, declined to test the speed of the Blake with her on a race from New York harbor to Halifax. One trouble with English vessels, which so seldom develop their calculated speed, is that they are not given the boiler power ours are. If American vessels were run under the draught that is allowed on English ships they would develop speed as yet unheard of.

As pictures of the Machais and Castine were thrown on the screen, Mr. Nixon referred to their lengthening, which was done in preference to reducing the weight of their batteries, and said: "We have had no failures. Our ships our be'ter, class for class, than any others in the world."

Cassier's Magazine for February contains several very interesting illustrated articles, among them a biographical sketch of John J. Thornycroft, the widely known torpedo boat builder, by C. J. Cornish, with eight illustrations of some of Mr. Thornycroft's engines and boilers; Modern Ship Building tools, by J. Arthur Gray, with 12 illustrations of some representative machines.

NEWS AROUND THE LAKES.

CLEVELAND.

Major D. H. Pond, Capt. George Gibson, and others have been in Columbus making all the efforts in their power in the interest of the naval reserve bill, which is now under consideration by the committee on military affairs.

Delegations have gone to Washington this week to appear before Congressional committees in the interest of bills appropriating money for Cleveland harbor improvemenc, regulating rafting on the lakes, and to erect a new custom house, and in opposition to the Detroit bridge bill.

The Lorain Times is authority for the statement that Capt. Ralph Lyon, master of the Zenith City, was offerred the captency of the North Land, with a salary of $2,100 for four months. The Times says Capt. Lyon could not accept the offer, as he had closed a contract to sail the Queen City, now building at the Cleveland shipyard.

The Cleveland Marine Engineers will enjoy their 15th annual sociable and dance at Merrill's hall, on the evening of Feb. 10. William H. Kennedy, L. W. Weeks and H. T. McAuley form the committee of arrangements.

While in most places the west breakwater basin has a depth of sixteen feet, yet, because of some few obstructions it will not be advisable for any vessel drawing mcre than ten feet of water to use tne western entrance to the harbor next spring.

The plans for the proposed bridge over the old river bed at Willow street, have not yet been completed, the council has authorized D. E. Wright, director of public works, to advertise for bids for building the bridge, which will be 300 feet long and is estimated to cost $140,000.

Cleveland Lodge, No. 4, of the Ship Masters' Association, has issued very handsome and elaborate invitations to their annual reception and ball, which will occur at Army and Navy Hall, Wednesday evening, February 12. The Great Western Band and Orchestra will furnish music for the occasion, and the usual excellent supper will be served. The affair will be in charge of Captains A. B. Nelson, John McNeff, R. C. Pringle, C. E. Benham, Client G. Ennes, Chas. H. Wallace, Thomas Jones and A. J. Greenley.

Officers of the Wilson Transit company for 1896 are: Capt. Thomas Wilson, president, treasurer and general manager; R. McLauchlan, vice-president; Harvy D. Goulder, secretary; board of directors, J. B. Upson, George L. Quayle and W. D. Rees.

Newly-elected officers of the Richardson Transportation company are: President, H. J. Webb; vice-president, Henry C. Ellison; secretary, treasurer and general manager, W. C. Richardson; directors, H. J. Webb, Henry C. Elllison, W. C. Richardson, F. W. Leck, Harvey D. Goulder, Thomas Jones and E. J. Jackson.

Thomas J. W. Quirk, a well-known and aged citizen of Cleveland, died at his home No. 1222 Curtis avenue, Sunday morning. As early as 1850 he was one of the most prominent men in the lake traffic, and sailed on the larger vessels of the earlier days. The funeral services were held at 2 o'clock Tuesday.

The tug R. E. Goodill was sold by United States Marshal for $510.

CHICAGO.

Special Correspondence to The Marine Record.

Captains George McLeod, of Buffalo, and Daniel McLeod, of Cleveland, held surveys on the steamers Chas. S. Parnell and Kittie M. Forbes in Miller Bros.' drydocks during the past week.

The steamer Kittie M. Forbes, which loaded corn at Armour's "E" elevator recently, sprung a leak a few hours after she received her cargo. She was towed to the Minnesota elevator and had her cargo taken out, about 1,200 bushels of which was wet. She was then placed in dry-dock when it was discovered that some planks on her bottom on the starboard side had been forced in by contact with some obstruction at the bottom of the slip, which is thought to be a portion of the wreckage from the tug Morford, which was blown up near the mouth of that slip last fall.

At a recent meeting of the Chicago Steamship Co. Capt. James S. Dunham was elected president, treasurer and manager of the company.

The rebuild on the Dunham Towing Co.'s tug T. T. Morford is being pushed forward and will be completed by April 1st. She will receive a new marine fire-box boiler, 8½ x 16, to be 150 lbs. steam pressure, which is being built by Johnston Bros., of Ferrysburg, Mich.

The repairs to Capt. Dunham's schooner A. Mosher, to damage done by collision with the steamer Rochester last fall are nearly completed.

Palmer, Cook & Calbick chartered the steamer Toltec for corn for winter storage and delivery at Kingston in the spring at 4⅜c. and the steamer W. P. Ketcham and consort George B. Owen for corn to the same place at 4½c.

Capt. John Prindiville chartered the steamer Pontiac for 105,000 bushels of corn for winter storage and delivery in the spring at Buffalo at 2½c.

Wiley M. Egan chartered the schooner B. L. Pennington for corn for winter storage and delivery at Buffalo in the spring at 2⅝c.

The Independent Tug Line towed the steamer Egyptian to the Iowa elevator; the steamer Nyanza to the Union elevator, the steamer C. Tower, Jr. and Foltic to Armour's E elevator, the schooner Fillmore to the Daville elevator, the schooner Peshtigo and the steamer Charles H. Bradley to the Indiana elevator all to load grain for winter storage; the steamer J. Emory Owen and schooner Michigan to their winter dock at Peabody's coal yard.

An official statement of Chicago's receipts and shipments of lumber during the last calendar year shows total receipts of 1,637,389,000 feet. This is to be compared with 1,566,150,000 feet in 1894. Shipments out of the city during the year were 771,944,000 feet as against 639,199,000 feet in the year earlier. The receipts show an increase over 1894 of about 4.5 per cent, while the shipments exhibit an almost corresponding increase of 4.2 per cent. According to the report of the Chicago dock committee, receipts by lake were about 15,000,000 feet less than in 1894. It is apparent then that there must have been a considerable increase in the receipts by rail, and probably other pine than white profited by the increased business.

WILLIAMS.

BUFFALO.

Special Correspondence to The Marine Record.

In the statistics given last week the total registered tonnage of vessels entering this port in 1895 was given as 4,684,093, and that of vessels clearing as only 466,568, although the addition of the component figures given showed a considerably larger tonnage. The trouble lay in the omission of a figure, the true sum being 4,665,698.

Two bills have been introduced in the State Senate for the benefit of canal men. One provides for the appropriation of $170,000, to be expended by the Superintendent of Public Works in purchasing six floating elevators, four to be located at New York and two at Buffalo, to be run by steam and to have a capacity of 10,000 bushels per hour each, and fixes the charge for service at ¼c at Buffalo, and ¼c at New York for loading direct into ocean steamers. The charge here is now 1 3c and 1.5c at New York. The bill provides that the floaters shall be ready by May 18, 1896.

The other bill provides for a fine of $1,000 to be assessed against any railroad convicted of discriminating in freight rates.

Capt. J. J. H. Brown, President of the Lake Carriers' Association, presented a mass of interesting data regarding Buffalo's commerce, to the Merchant's Exchange Monday evening. He gave the figures contained in last week's RECORD and pointed out that while Boston was the second seaboard port, the tonnage entered and cleared there in 1895 was about 5,800,000 tons as compared with 9,350,715 tons for Buffalo, 9,172,373 tons for Chicago, 7,245,234 tons for Milwaukee, and 5,649,527 tons for Cleveland, for a much shorter period. The entire amount expended in Buffalo harbor by the government up to January 25 is $1,616,443.69. Glasgow has expended in dock and harbor improvements upwards of $60,000,000, and Liverpool $110,000,000. The Exchange adopted stiring resolutions protesting against the construction of bridge piers in Detroit river, and endorsing the Grand Island bridge over Niagara river. The hearing on Buffalo's breakwater extension will occur Friday. Capt. Lymans has been granted permission by the War Department to accompany the delegation to Washington.

The steamer Topeka is still on the bottom and in decidedly bad shape on account of her cargo and the low water. Experts are of the opinion that some one will have to pay a smart sum to repair her when the grain is out of her.

DULUTH AND SUPERIOR.

Special Correspondence to The Marine Record.

The quantity of soft coal burned on the Ohio Coal Co.'s dock's was 2,500 tons.

The Hale-Palmer Exploration Syndicate has discovered a bed of first-class ore over 1,600 feet long and of good width and depth, on property near the Genoa mine. The syndicate which cousists of Judge Hale, Roswell Palmer, and one or two others, has an option on the property.

Some little wheat has been chartered here for May shipment at 3½c to Buffalo. Some of the boats which are serving as winter storage for wheat cargoes were placed on a basis of 3½ to 3¾c for carrying the cargo to Buffalo in the spring, according to the figuring of vesselmen, though allowing ½c a month carrying charge as made by the elevators it would hardly amount to that much.

The foreign insurance syndicate, which last winter contracted to take all the wheat and flour risks out of this market, fared very badly, in spite of the fact that its losses out of this port, so far as grain was concerned, was below the usual proportion. The syndicate was going to make shippers and itself rich by having no middleman, and local vessel brokers felt pretty blue over having one branch of their business wiped out. But $50,000 loss on grain alone, besides very heavy losses on flour, was too much for the syndicate, and it won't be in the market on the same basis this season. Grain shippers, too, have not been satisfied with the experience, and they have suggested their readiness for a switch back to the old conditions, provided the old companies make the concessions they have talked of. It is understood that an average rate of 30c has been offered. The syndicate made a rate last year of 15c on vessels valued at $100,000 or over, but 30c on all others. But this discrimination often worked as a hardship to shippers who could not get $100,000 boats.

FLOTSAM AND JETSAM.

Toledo marine engineers will dance at Odd Fellows' Temple on February 12.

Rumor has it that Ingar Olson, of the Milwaukee lifesaving station, has been appointed keeper of the new station at Bailey's Harbor.

Ice in Maumee River carried away two spans of the Lake Shore Bridge now building at Toledo, against which the vessel owners and masters are protesting. The loss is estimated at $50,000.

Sandusky's city council has appointed Paul Miller, Sidney Kilbourne, H. Hommel, James Flynn, and R. E. Schuck a committee to go to Washington in the interest of an appropriation for that harbor.

Lake underwriters are quoted by the daily press as agreeably surprised to find that repairs to "touch-and-go" damages sustained by vessels last season foot up at about one-fifth the estimated cost.

Parties in Ludington are negotiating for the Pere Marquette Lumber Co.'s dock and water front property, presumably in the interest of some railway company, supposed to be the Chicago & West Michigan.

The work of building the new ore dock at Presque Isle, Marquette, has already begun, and will be finished early in the spring, or as soon as the new railroad is completed. T. A. Kearns, of Chicago, is the contractor.

The report comes from Sault Ste. Marie that lumbermen in that vicinity, who have entered into season contracts for Canadian timber or lumber, are very much disturbed over the possibility of an investigation of the duty on lumber.

General Flagler, Chief of the Ordinance Corps, expresses himself in prior of a line of forts from Ogdensburg to Duluth. Congressman Woodman has introduced a bill to fortify Fort Brady sufficiently to defend the Sault locks in cases of emergency.

Thieves broke into the cabin of the steamer I. Watson Stephenson at Marinette recently during the temporary absence of Capt. John Nicholson, who is shipkeeper, and carried away goods to the value of about $200. Among the articles taken was a valuable diamond and some other jewelry.

It is possible that the stranded schooner Commerce will soon be sold at marshal's sale. The debts outstanding against the vessel, it is reported, will reach $4,000 or more, which is a larger sum than the owner feels able to pay. This indebtedness was incurred in the endeavor to get the Commerce afloat.

Hard coal production for 1895 in the Eastern mines reached the enormous total of 46,545,000 tons. This surpasses 1894 by some 4,000,000 tons, and is higher than that of 1893, which was a record-breaker, by more than 3,000,000 tons. This is more than the demand of the anthracite trade can stand, says Black Diamond, and must have resulted in the accumulation of considerable stocks at the mines.

Col. S. B. Dick, president of the Shenango railroad line and car ferry line, was in Washington last week. He advocated, before the House Committee on Rivers and Harbors, the placing of wing breakwaters extending diagonally across the ends of the piers some 500 or 600 feet out into the lake, in order to facilitate the entrance of vessels into the harbor. This is the same sort of breakwater that is wanted at Ashtabula.

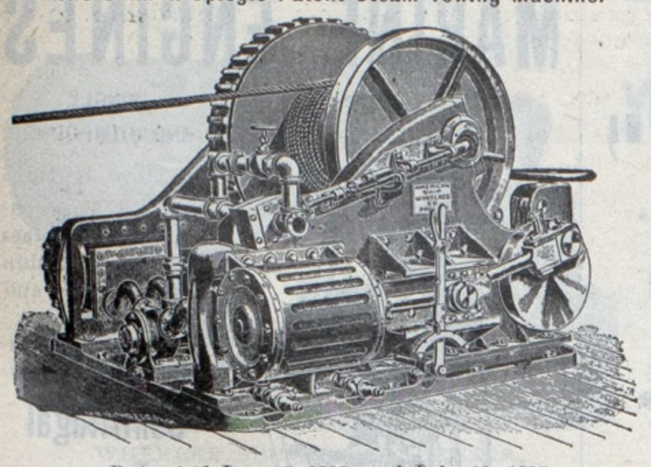
Nathaniel P. Stewart has commenced suit against the H. M. Loud & Sons Lumber Co., of Oscoda, laying his damages at $2,500. In his declaration the plaintiff alleges that on March 23, 1895, he entered into a contract with the defendants to sail the tug Petrel during the season of navigation for $60 a month and board, and that in July following they discharged him without cause. His bill of particulars amounts to $410.

Capt. James Burns, 17th United States Inf., in a paper published at Columbus last week, says that in case of war with Great Britain Cleveland or Chicago would be the first place assaulted. He said the capture of Columbus would be of more importance than the taking of any post south of Fortress Monroe, and suggested, among other things a canal across New York to be 100 feet wide at the bottom and of sufficient depth to be used profitably for commerce in time of peace and to admit the smaller naval vessels to the Great Lakes in time of war.

Major Wm. Ludlow, formerly U. S. Engineer at Detroit, in charge of lighthouse work, now military attache at the court of St. James, and who served on the Nicaragua Canal commission, has been instructed to visit other famous waterways including the Suez, Corinth, Kiel, North Holland and Manchester Canals, and the Caledonian system of interior navigation for the purpose of securing data and examining their engineering features, and their adaptation to problems to be solved in constructing a canal across the American Isthmus.

Mnager Homer J. Carr, of the Lake Marine News Association, announces that in addition to its regular news service the association is preparing to cover Sault Ste. Marie and Mackinaw direct to private subcribers during the coming season and suggests that vessel men wait until March before closing any arrangements at these points. The Marine News Association expects to be able to offer them inducemeuts not hitherto possible under the old system of vessel reporting.

The Shaw & Spiegle Patent Steam Towing Machine.



Patented June 5, 1888, and July 16, 1895.

ESTABLISHED 1857.

American Ship Windlass Company,

...Providence, R. I.

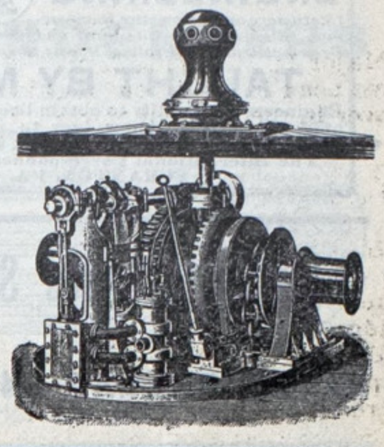
UP TO DATE IN ALL RESPECTS.

Providence WINDLASSES ...AND CAPSTANS.

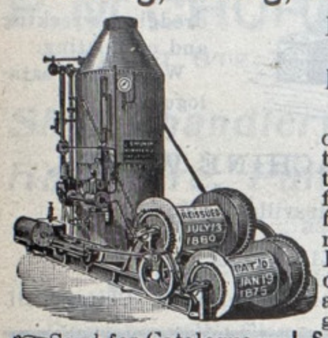
ADDRESS

FRANK S. MANTON, AGT.

The "Providence" Patent Steam Capstan Windlass.



Hoisting, Mining, Bridge Erecting,



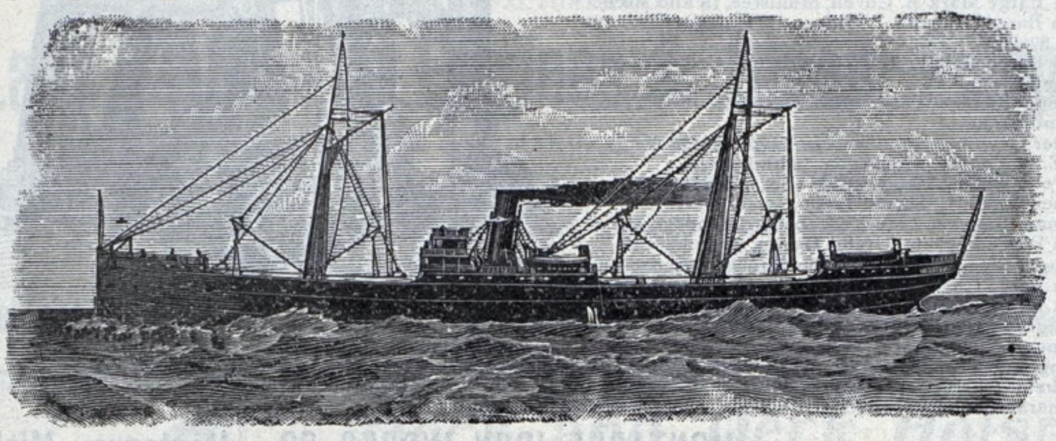
Dock Build'g, Pile Driving, Coal Hoisting and Quarry Engines

of any power, sugar cane transferring engines, transferring machines for depositing cane from car to carrier, with my improved Patent Friction Drums, with or without Boilers. Any amount of reference given. Established 1870.

Send for Catalogue. J. S. MUNDY, Newark, N. J.

1744 Market St., Philadelphia, Pa.
22 Light St., Baltimore, Md.
117 Water St., Pittsburgh, Pa.
249 South Jefferson St., Chicago, Ill.
715 North Second St., St, Louis, Mo.
39 Magazine St., New Orleans, La.
34 Fremont St., San Francisco, Cal.
85 Front St., Portland, Oregon.
Fourth & Wakouta Sts., St. Paul, Minn.
218 Congress St., Boston, Mass.

F. W. WHEELER & COMPANY.,



BUILDERS OF ALL KINDS OF

IRON, STEEL AND WOODEN SHIPS,

FOR LAKE OR OCEAN SERVICE.

West Bay City, Mich.

F. W. WHEELER, Prest. E. T. CARRINGTON, V.-Prest
C. W. STIVER, Secretary & Treasurer.

FRONTIER IRON WORKS,

MARINE ENGINES,

DETROIT, MICH.

INCORPORATED 1794.

Insurance Company of North America.

CAPITAL, PAID UP IN CASH, - $3,000,000.00.
ASSETS, - - - - 9,562,599.92.

CHARLES PLATT, President.
EUGENE L. ELLISON, 2d Vice President.
WILLIAM A. PLATT, Vice President.
GREVILLE E. FRYER, Sec'y and Treas.
JOHN H. ATWOOD, Assistant Secretary.

Lake Marine Department.

GEORGE L. McCURDY, MANAGER, CHICAGO, ILL.

MARINE AND INLAND INSURANCE.

Atlantic Mutual Insurance Co.,

Organized 1842. Office 51 Wall Street, NEW YORK.

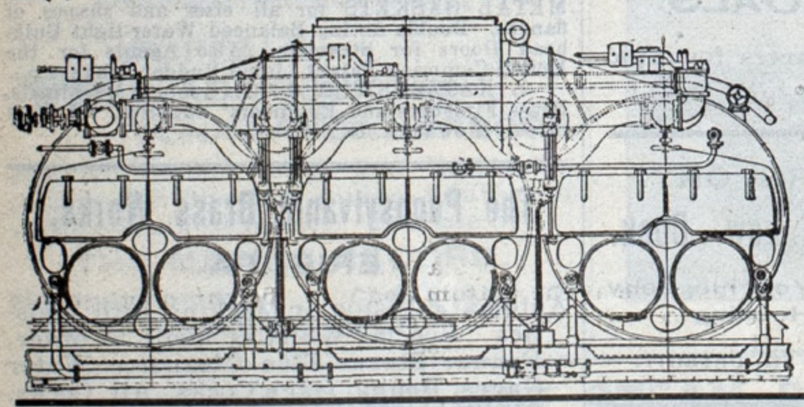
Insures against Marine and Inland Transportation Risks and Issues Policies making Loss Payable in England.

Assets over $10,000,000 for the Security or its Policies.

The profits of the Company revert to the assured, and are divided annually upon the premiums terminated during the year; thereby reducing the cost of insurance. For such dividends, certificates are issued bearing interest until ordered to be redeemed, in accordance with the charter.

J. D. JONES, Pres. W. H. H. MOORE, Vice Pres. A. A. RAVEN, 2d Vice Pres. J. H. CHAPMAN, Sec.

LAKE ERIE BOILER WORKS



The best equipped plant in America for the manufacture of

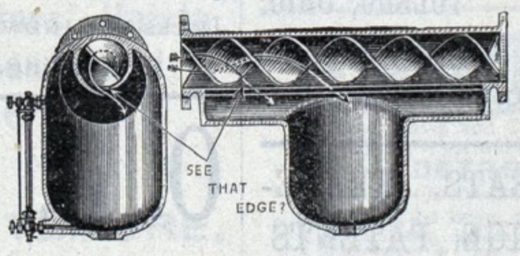
MODERN MARINE BOILERS.

BUFFALO, N. Y.

FREE

To Engineers and Steam Users, my TREATISE ON THE STEAM SEPARATOR. It tells all about Separators in general and the MOSHER in particular.

You Need It

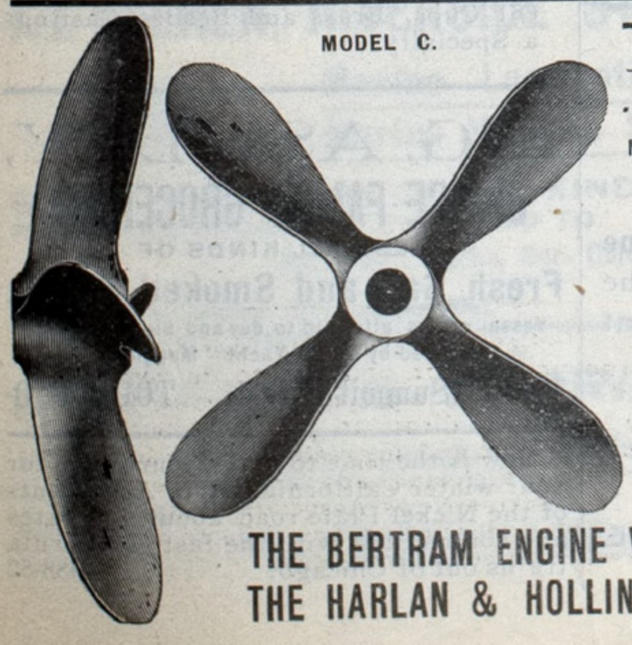


Send For It

THE INFORMATION IT CONTAINS WILL BE VALUABLE TO YOU.

CHARLES D. MOSHER, - - No. 1 Broadway, New York.

MODEL C.



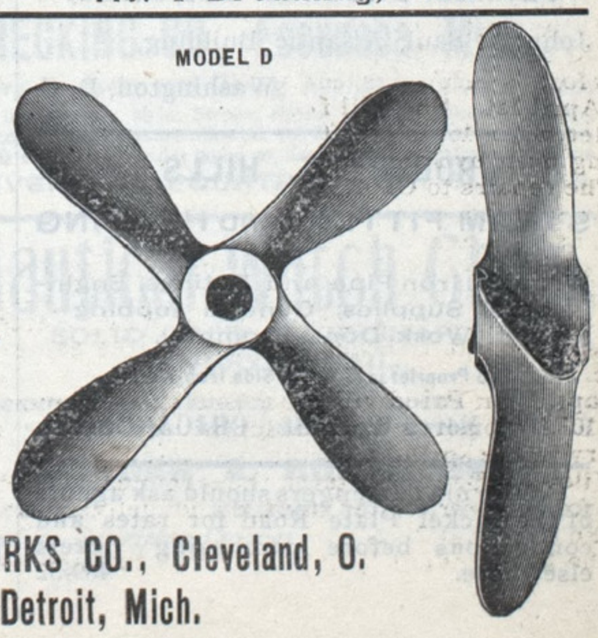
THE CASE . . . Propeller Wheels.

. . OUTWARD THRUST

MODEL A, MODEL B, MODEL C, MODEL D, MODEL E.

The Speediest, Smoothest Running and Most Economical Wheels Yet Made.

MODEL D



MANUFACTURED BY A. WELLS CASE, Patentee, Highland Park, Conn.

THE BERTRAM ENGINE WORKS CO., Toronto, Ont.
THE HARLAN & HOLLINGSWORTH CO., Wilmington, Del.

THE GLOBE IRON WORKS CO., Cleveland, O.
S. F. HODGE & CO., Detroit, Mich.

MARINE ENGINEERING

MINNEAPOLIS SEPT 26 1894 MINN

(Stationary and Locomotive Engineering), Electricity, Architectural and Mechanical Drawing, Plumbing, Heating, Mining, English Branches, etc.

TAUGHT BY MAIL.

Engineers can qualify to obtain licenses. To enroll only necessary to know how to read and write. Circular **free.** State subject you wish to study.

The International Correspondence Schools, SCRANTON, PA.

Walter H. Oades' Shipyard,

MARINE RAILWAY AND SHEERS,

Ship Carpenters, Calkers & Joiners.

Working on reasonable terms.

Yard: Foot of Dubois Street, DETROIT.

Telephone 1670, 3 rings.

ABRAM SMITH. ANGUS H. SMITH.

ABRAM SMITH & SON,

SHIP-BUILDERS,

ALGONAC, MICH.

Wooden Ships of any description built, rebuilt, or repaired.

Send for specifications, prices, etc.
Good slips for laying up boats.

A. J. MORSE & SON.

DIVING APPARATUS

140 CONGRESS ST. BOSTON.

A. GILMORE & SONS

TOLEDO DRY DOCK.

Telephone No. 157, TOLEDO, OHIO.

Vessels Docked and Repaired at Reasonable Rates.

PATENTS, CAVEATS, TRADE-MARKS, DESIGN PATENTS COPYRIGHTS, Etc.

CORRESPONDENCE SOLICITED.

John A. Saul, Atlantic Building,
Washington, D. C.

ROBERT E. HILLS,

STEAM FITTING AND HEATING

Wrought Iron Pipe and Fittings, Engineers' Supplies; General Jobbing Work Done Promptly.

Also Proprietor of North Side Iron Works.

57 & 59 North Wells St. CHICAGO, ILL.

California passengers should ask agents of the Nickel Plate Road for rates and connections before purchasing tickets elsewhere. 489-52

ESTABLISHED 1871. INCORPORATED 1893.

MONTAGUE IRON WORKS CO.,

MONTAGUE, MICH.

MANUFACTURERS OF

Marine and Stationary Engines

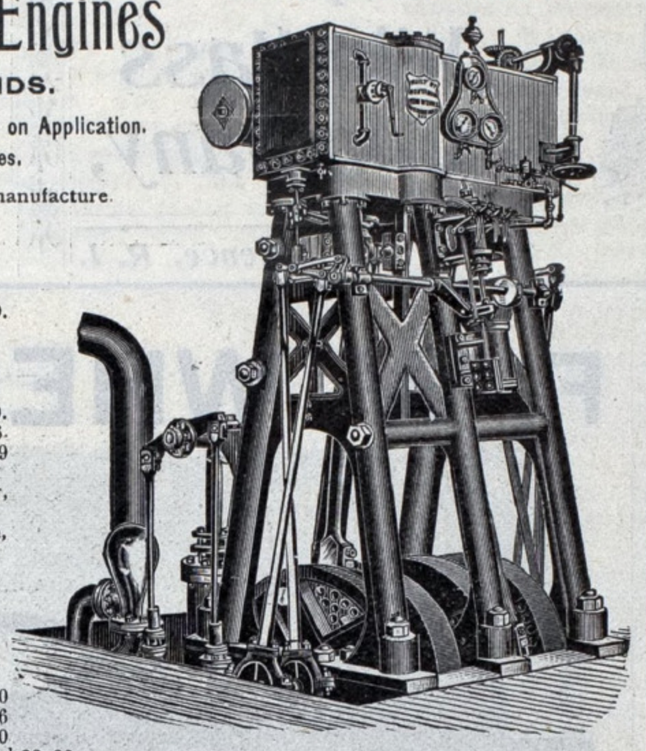
AND BOILERS OF ALL KINDS.

Heavy Castings a Specialty. Prices Quoted on Application.

Fore and Aft Compound Marine Engines.

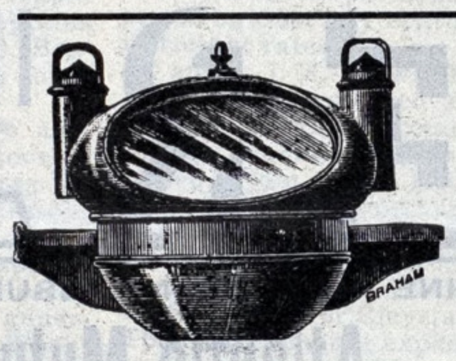
The Engines in the following boats are of our manufacture.

Tug, Hunter, Chicago, 15 and 28x22.
Tug, Tacoma, Chicago, 16 and 30x24.
Tug, Zenith, Duluth, 18 and 36x30.
Steamer Glenn, South Haven, 14 and 28x20.
U. S Survey Steamer, W. S. Hancock 12 and 21x20.
Steamer Pine Lake, Charlevoix, 16 and 30x24.
Passenger Steamer Pilgrim, St. Clair, 14 and 28x20.
Steam Barge Iona, Grand Haven, 24 and 46x42.
Steam Barge M. T. Greene, Chicago, 20 and 36x36.
Steamer H. W. Williams, South Haven, 18 and 36x30.
Steam Barge Mark B. Covell, Manistee, 18 and 30x26.
Steam Barge Isabella J. Boyce, Michigan City, 19 and 32x26.
Steam Barge Luella H. Worthington, Cedar River, 19 and 36x30.
Passenger Steamer City of Kalamazoo, South Haven, 20 and 40x30.
Steamer Oval Agitator, Chicago, 14 and 28x20.
Tug E. G. Crosby, Muskegon, 16 and 30x24.
Tug Peter Coates, Sault Ste. Marie, 10 and 20x16
Steamer Lorain L, South Haven, 12 and 21x16.
Passenger Steamer Lotus, Escanaba, 16 and 30x24.
Steam Barge Sachem, Grand Haven, 21 and 38x36.
Passenger Steamer Bon Ami, Saugatuck, 14 and 28x20
Steam Barge Charles A. Street, Chicago, 20 and 36x36
Steam Barge Edward Buckley, Manistee, 18 and 36x30
Passenger Steamer E. G. Maxwell, Pentwater, 14 and 28x20.
Passenger and Freight Steamer Bon Voyage, Saugatuck, 16 and 30x26.
Passenger and Freight Steamer Mabel Bradshaw, Muskegon, 16 and 28x26.



The engraving represents our 20 and 36x36 Fore and Aft Compound Marine Engine. We build them all sizes and guarantee them to give satisfaction. Prices furnished on application.

MONTAGUE IRON WORKS CO., Montague, Mich.



FRANK MORRISON, COMPASS ADJUSTER

AND MANUFACTURER OF

NAUTICAL INSTRUMENTS.

COMPASSES. BAROMETERS, PATENT LOGS, BINNACLES, STEAM GAUGES, MARINE GLASSES, ENGINE INDICATORS.

All Nautical Instruments Carefully Repaired.

Office with Upson, Walton & Co., 161 River St., Cleveland, O.

THE CUDDY-MULLEN COAL COMPANY

DEALERS IN COAL.

Docks at Government Pier, Whiskey Island, and Adjoining Globe Dry Dock.

All fully equipped with Revolving Derricks; also, Lighter Carrying Derrick, and One Hundred Two and One-Half Ton Buckets.

Main Office, 81 Perkins Building, East Side of Main Street Bridge.
Dock Office, 127 West River St., Cleveland, Ohio. Telephone No. 8.

Boats Coaled Day and Night. Docks at Amherstburg and Sandwich, Ontario

---

MULLEN-GATFIELD COAL CO.,

Dealers in the Celebrated

MANSFIELD AND YOUGHIOGHENY COALS.

Docks at SANDWICH, ONTARIO, opposite the Fort at Detroit, with chutes for rapid fueling. Elevated docks and derrick at AMHERSTBURG, ONTARIO.

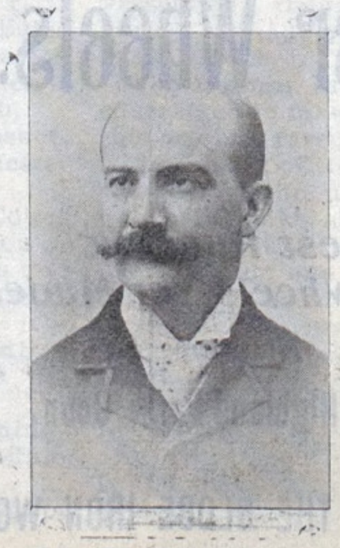
O. W. SHIPMAN DOCKS.

AMHERSTBURG, ONT.

Four Chutes and Low Dock.

Massillon and Youghiogheny Hocking **COAL**

Main Office, 90 Griswold St., DETROIT.



TIME AND PLACE TO ADVERTISE

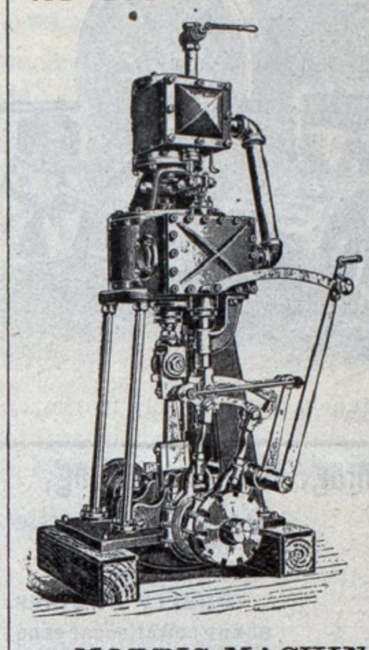
Now and in Beeson's Inland Marine Directory is the time to order, and the place in which to put an advertisement of your business for 1896.

FOR TERMS ADDRESS

H. C. BEESON,

308 Royal Insurance Bldg., CHICAGO, ILL.

MARINE ENGINES



SINGLE AND COMPOUND.

5 TO 200 HORSE-POWER. These engines are high-class in workmanship and material and moderate in price.

Send for cuts, description and prices.

Centrifugal Pumps

For raising coal, sand, &c. For dredging, wrecking and circulating.

Write for catalogue.

MORRIS MACHINE WORKS,

Baldwinsville, N. Y.

IENION & HUBBELL, Agents,

61-69 North Jefferson St., Chicago, Ill.

Baker's Quadruple Grip Anchor

PATENTED.

AGENTS WANTED.

Watertown Brass & Mfg. Co.,

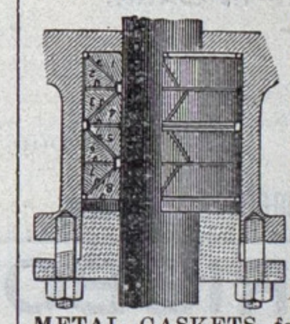
WATERTOWN, N. Y.

Send Stamp for Catalogue.

Mfrs. Yacht, Boat and Canoe Hardware.
Special Work a Specialty.
Boat Rails, Stanchions, Etc.

MENTION THIS PAPER.

Katzenstein Self-Acting Metal Packing



for Piston Rods, Valve Stems, Etc., of every description, for Steam Engines, Pumps, Etc. Adopted and in use by the principal Iron Works, Steamship Companies, Mills and Engine Builders, Electric Light and Power Plants within the last twelve years in this and foreign Countries. Also FLEXIBLE TUBULAR METALLIC PACKING for Slip-Joints on Steam Pipes and for Hydraulic Pressure. Also METAL GASKETS for all sizes and shapes of flanges. Double-Acting Balanced Water-tight Bulkhead Doors for Steamers. Also Agents for the McColl-Cumming Patent Liquid Rudder Brake.

L. KATZENSTEIN & CO., General Machinists, Brass Finishers and Engineers' Supplies, 357 West Street, NewYork, N.Y.

The Pennsylvania Brass Works,

ERIE, PA.

Automatic Piston or Mocking Bird Whistles. Special Whistles made to order. Penna. Steam Flue Cleaner. Water Gages, Penna. Gage Cocks, Air Cocks, Oil Cups, Brass and Bronze Castings a Specialty.

E. G. ASHLEY,

CHOICE FAMILY GROCERIES.

ALSO ALL KINDS OF

Fresh, Salt and Smoked Meats.

Vessel orders attended to day and night. Goods delivered by Steam Yacht "Maggie D."

36 & 38 Summit Street. TOLEDO, O

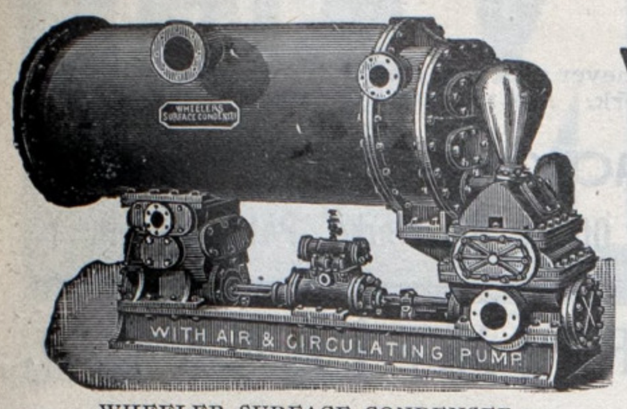
Now is the time to make your plans for your winter California trip. Ask agents of the Nickel Plate road about low rates and connections with the fast California trains out of Chicago. 488-52

Wheeler Condenser & Engineering Co.,

39 & 41 CORTLANDT STREET, NEW YORK.

WHEELER'S IMPROVED SURFACE CONDENSERS

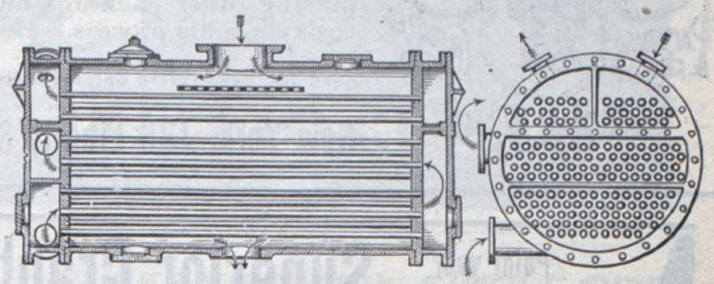
Mounted upon Combined Air and Circulating Pumps.



WHEELER SURFACE CONDENSER,
Mounted on Combined Air and Circulating Pumps.

Sole Proprietors and Manufacturers of the
WHEELER STANDARD SURFACE CONDENSER.
WHEELER ADMIRALTY SURFACE CONDENSER.
WHEELER LIGHT HALL SURFACE CONDENSER.
VOLZ PATENT COMBINED SURFACE CONDENSER AND FEED-WATER HEATER.
WHEELER FEED-WATER HEATER, AIR AND CIRCULATING PUMPS.
EDMISTON PATENT FEED WATER FILTER.

Send for Pamphlet, "Machinery for Small Boats, etc."



PATENT COMBINED SURFACE CONDENSER AND FEED-WATER HEATER.

P. M. CHURCH & CO.

SAULT STE. MARIE, MICH.,

Ship Chandlery, Hardware, Paints, Oils,

And all classes of

VESSEL SUPPLIES.

Coppersmith Shop in connection.

Corner Portage and Ashmun Sts.

TELEPHONES; - { OFFICE NO. 7. RESIDENCE NO. 4.

Eight Elegant . . .
PHOTOGRAVURES

SIZE, 10 x 17 INCHES.

Whaleback Steamer Christopher Columbus,
STATE of OHIO—STATE of NEW YORK,
Steel Ship Builders,
Steamer ARTHUR ORR,
English-Built Steamer TURRETT,
Dry Dock Representatives,
Schooner JOHN FITZPATRICK.

Complete set mailed to any address on receipt of 25c.

SMITH & SMITH,
144 Superior Street, CLEVELAND, O.

BUFFALO HARBOR CHARTS . .

Containing full information regarding

BUFFALO,
BLACK ROCK AND
TONAWANDA HARBORS

Also all Canals, Slips and Basins, together with Directory giving location of various business houses. For sale by

THE MARINE RECORD,
144 SUPERIOR ST., CLEVELAND, O.
PRICE $2.00 EACH.

THE CHASE MACHINE COMPANY.

MACHINISTS, ENGINEERS AND BLACKSMITHS,

MANUFACTURERS OF

Land & Marine Engines & Steam Pumps,

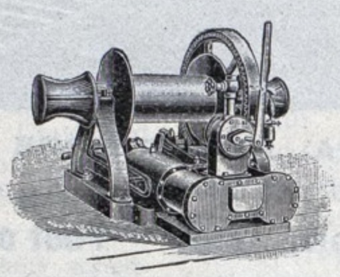
SOLE OWNERS AND MANUFACTURERS OF THE

CHASE AUTOMATIC FOG WHISTLE MACHINE.

IN USE ON NEARLY ALL LAKE STEAMERS.

Agents for ASBESTOS STEAM, BOILER AND PIPE COVERING.

Telephone 994. 111 Elm Street, CLEVELAND, O.



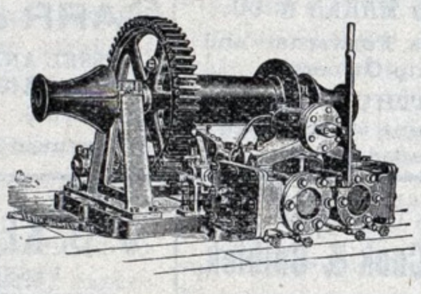
Dock and Deck Hoists.

ALL KINDS OF

Machinery and Friction Hoists.

JACKSON & CHURCH, Saginaw, Mich.

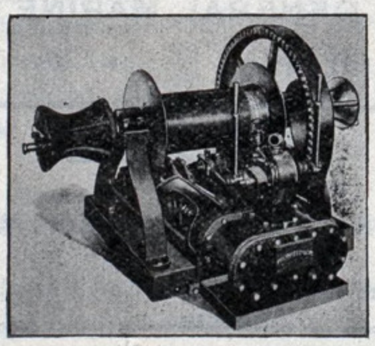
Send for Prices and Circulars.



DECK AND DOCK HOISTS

Our Hoists will be found on the following boats: Tugs—Superior, Sumner, Sweepstakes, Winslow, J. K. Emmett, Acme, Mockingbird, Waldo Avery, Reliance, John Owen, Charlton, Howard, Duncan City, Chamberlain, Balize, Sampson, Westover, Gladiator, W. B. Castile, Home Rule, Robert Weideman, Boscobel and Peter Smith; Propellers—Metamora, Abercom, Penobscot, J. J. McWilliams, I. W. Stephenson, John W. Pauly; Barges—Jenness, Noquebay, Mantanee. Also in use by F. W. Wheeler & Co., W. B. City, Mich., Blood and Hart, Marine City, Mich., Michigan Salt Works, Marine City, Doty Bros,, Pile Drivers, Toronto, Canada.

MARINE IRON CO., - - - - BAY CITY, MICH.



DECK HOISTS

Coal and Contractors' Hoists,
Steam Steering Gears and
Conveying Machinery
For all Purposes.

MANUFACTURED BY W. H. WHITTEMORE,

WRITE FOR PRICES. *WEST BAY CITY, MICH.*

MARINE · IRON · WORKS

CHICAGO

CATALOGUE FREE

STEAM YACHTS AND MACHINERY.

DRAWING AND ROUGH SKETCHING

For Marine Engineers. Just published, price $2.00, postage prepaid. Sixth edition, 13th thousand, enlarged to 226 pages and 100 plates and diagrams. IN TWO PARTS BOUND IN ONE VOLUME. By

JAMES DONALDSON, Consulting Engineer,
25 Tower Buildings, LIVERPOOL.
ALSO
DONALDSON'S
ENGINEERS' ANNUAL AND ALMANAC
FOR THE YEAR 1896.

A record of progress and events in connection with steam shipping. Price 35 cents, postage prepaid.

FRANKLIN HOUSE

Corner Bates and Larned sts., only a block from Woodward and Jefferson aves.
DETROIT, MICH.
The house has been **thoroughly renovated** and is in the heart of the city, convenient to all car lines, depots and boat landings.
Per Day. $1.50. **H. H. JAMES.**

J. J. KEENEN, RIVERSIDE STEAM BOILER WORKS.

Marine, Locomotive and Stationary Boilers.
Marine Work a Specialty. . . . .

SHEET IRON WORK OF ALL KINDS.
REPAIRING PROMPTLY ATTENDED TO.
Office and Works, Cor. Cologne and Fuller Streets,
Telephone, Canal 401 CHICAGO.

JEFFERY'S MARINE GLUE

For Paying Seams of Decks and other Purposes.

L. W. FERDINAND & CO., BOSTON, MASS.
SEND FOR CIRCULAR.

J. H. OWEN, Prest., Chicago. F. H. VAN CLEVE, Sec'y, Escanaba. Capt. GEO. BARTLEY, Supt., Escanaba.

ESCANABA TOWING & WRECKING CO., Escanaba, Mich.

Tugs, Lighters, Steam Pumps, Hawsers, Hydraulic Jacks and Diving Appliances always ready
TUG MONARCH—Engine Compound, Cylinder 16 & 30 in. diameter, 30 in. Stroke, Steam Pressure allowed, 125 lbs.
TUG DELTA—Cylinder 20 by 22. Steam Pressure allowed, 105 lbs.
TUG OWEN—Cylinder 20 by 20, Steam Pressure allowed, 104 lbs.
CENTRIFUGAL PUMPS. SEVEN AND FOURTEEN INCH SUCTION.

Nautical Watch Chain.

SOLID GOLD. SHIP-SHAPE IN EVERY DETAIL.

Sheaves work, snatch block opens out and seizings are passed correctly.

MORGAN A. ROBERTSON,
26 John Street, New York.
Send for Descriptive Circular.

CRANDALL'S PATENT PACKINGS.

FOR STEAM, WATER AND AMMONIA.

Not having been subjected to the injurious chemical action of boiling oil, outlast all others, and never melt and gum. We are constantly displacing other packings on Lake and Ocean Steamers, and can guarantee our goods for marine work. Ask the man offering "the same thing" to explain his process. He boils his goods in oil.

Send for Descriptive Catalogue and Samples.

CRANDALL PACKING CO.

New York, 136 Liberty Street. Chicago, 51 S. Canal Street. Main Offices and Works, PALMYRA, N. Y.

Paint your Vessels with **Superior Graphite Paint**

NO BLISTERING, CRACKING OR SCALING.

Made especially for Stacks, Decks, Sides, Hulls and Water Compartments.
Strictly anti-rust, and most durable and economical.

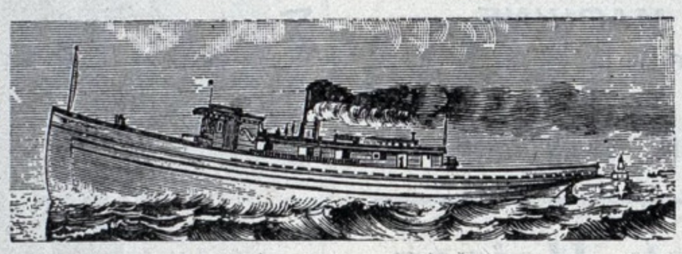
DETROIT GRAPHITE MFG. CO. 542 River St., Detroit, Mich.

WHITTON & BATES, Agents, 503 Perry-Payne Building, Cleveland, O.

H. A. HAWGOOD, Pres't. PHILIP MINCH, Vice-Pres't. GEO. ELSEY, Jr., Gen'l Mang'r. J. A. SMITH, Sec'y. J. R. SPRANKLE, Treas

The Cleveland Tug Company,

First-class Tugs, Steam Pumps, Divers, Hawsers, Lifting Screws, Etc., furnished Promptly on Orders by Telegraph or otherwise



Steamers when outside wanting our Tugs, blow one long whistle and as many short ones as they want tugs.

OPEN DAY and NIGHT. DOCK and OFFICE FOOT of FRONT ST.

Long Distance Telephone 725. Cleveland, Ohio.

The "CINCINNATI" Automatic
STEAM STEERING GEAR

Simple, Powerful Machine. Noiseless and Sure. Send for Circular.

FRONTIER IRON WORKS, Detroit, Mich.,
AGENTS FOR THE LAKES.

AMERICAN STEEL BARGE CO.

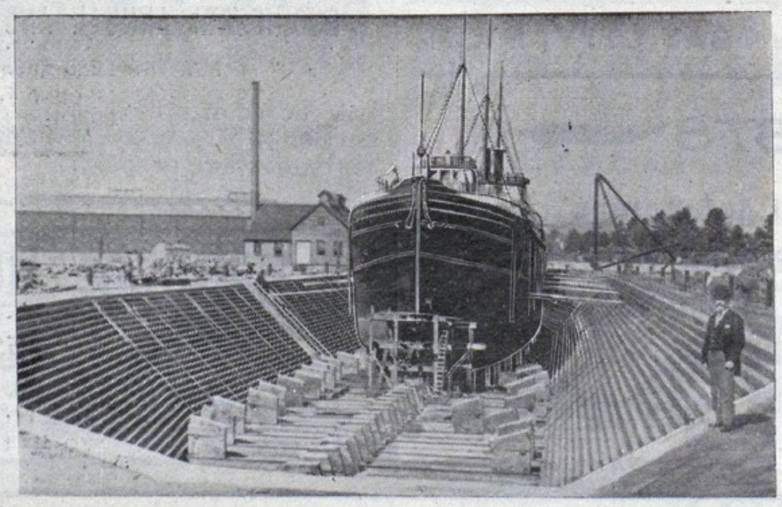
STEEL AND METAL SHIPS

OF ALL CLASSES BUILT ON SHORTEST POSSIBLE NOTICE AT OUR YARDS AT

WEST SUPERIOR, WIS., and also at EVERETT, WASH.

PHOTOGRAPH OF 300 FT. BOAT IN DOCK.

Plates and Material Always on Hand to Repair all kinds of Metal Ships in Shortest Time.



Best Quality of Oak in Stock for Repairing Wooden Vessels of all Classes.

SIZE OF DOCK

Length, Extreme	537 feet.	Entrance, Top	55 feet 9 in.
Breadth, Top	90 " 4 in.	Entrance, Bottom	50 "
Breadth, Bottom	52 "	Depth over Sills	18 "

LARGEST DRY DOCK ON THE LAKES.

PRICES FOR REPAIRS AND DOCKING SAME AS AT LOWER LAKE PORTS.

SUPERIOR, WIS.

A NUMBER OF PROPELLER WHEELS IN STOCK AT DRY DOCK.

CAPT. SAMUEL W. GOULD,

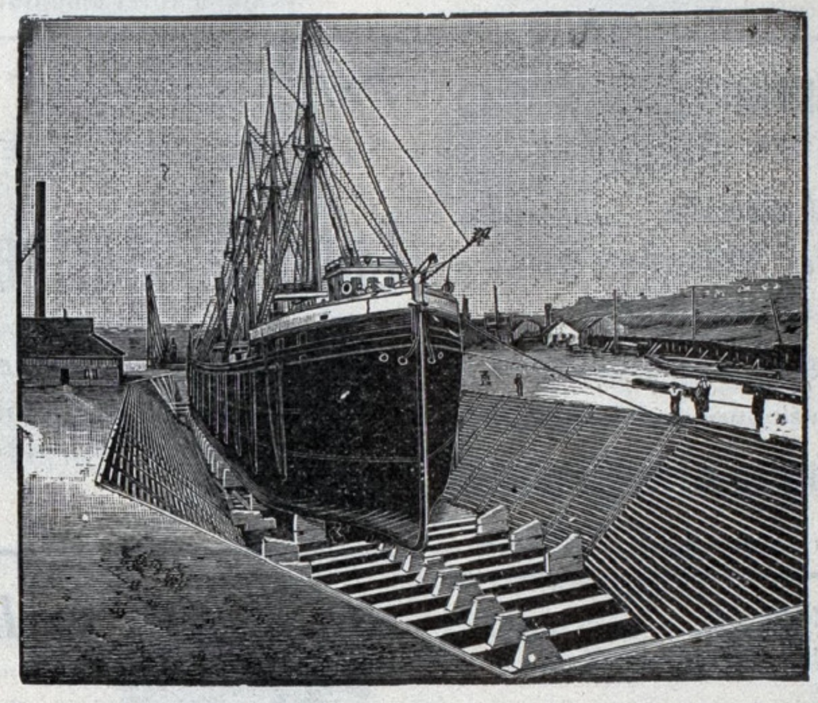
Ex-Ass't Inspector of Steam Vessels. 265 MARCY AVE., CLEVELAND, O.

Gives instruction in Navigation and prepares Candidates for the Examinations for Master and Pilot's Licenses, before the Local Steamboat Inspectors.
Also Instructions given in the Safety Valve and other Problems required by Candidates for Engineers' License.

TERMS REASONABLE. TAKE WADE PARK OR PAYNE AVE. CAR.

THE SHIP OWNERS DRY DOCK CO.

Largest DOCK YARD on the GREAT LAKES.



Capacity with Two Docks to Dock the Largest Ships on the Lakes.

GENERAL REPAIR WORK PROMPTLY ATTENDED TO.

Being equipped with Lucigen Lights we can do work at night as well as day.

TELEPHONE 1635. Foot of Weddell St., CLEVELAND, O.

ESTABLISHED 1857.
THOMAS MARKS & CO.,
Merchants, Forwarders and Ship Owners.
PORT ARTHUR, CANADA.
N. B.—Special attention given to chartering vessels.

Calvin Carr. G. C. Blair. John Mitchell.
CARR & BLAIR
VESSEL AND INSURANCE AGENTS,
Rooms 1 and 2. Tel. Main 869.
12 Sherman St. CHICAGO.

A. A. Parker. James W. Millen. B. W. Parker.
PARKER & MILLEN,
Vessel & Insurance Agents.
Iron Ore & Coal Cargoes a Specialty.
Rooms 3 & 4 15 Atwater St., West.
DETROIT, MICH.

C. F. Palmer. H. W. Cook. Capt. J. A. Calbick.
Palmer, Cook & Calbick,
Vessel Agents and Underwriters,
No. 6 Sherman Street, Chicago, Ill.
Telephone, Main 3952.

J. G. Keith. D. Sullivan.
J. G. KEITH & CO.
VESSEL AND INSURANCE AGENTS,
140 and 141 Rialto Bldg. CHICAGO.
Telephone No. 3658.

JOHN PRINDIVILLE,
VESSEL AND INSURANCE AGENT,
12 Sherman Street,
Telephone Main 129. CHICAGO.

C. A. MACDONALD & CO.,

GENERAL MARINE INSURANCE AGENTS.

RIALTO BUILDING, CHICAGO, ILL.

THOS. WILSON,

MANAGING OWNER WILSON'S TRANSIT LINE,

General Forwarder, Freight and Vessel Agent. CLEVELAND, O.

C. R. JONES & CO., VESSEL AGENTS

FIRE AND MARINE INSURANCE.

Nos. 501, 502 and 503 Perry-Payne Bldg., CLEVELAND, O.

JOHN MITCHELL. JOHN F. WEDOW. ALFRED MITCHELL.
MITCHELL & CO., Vessel and Insurance Agents,
Office Telephone, 767. Residence John Mitchell, 3506.
508-509-510 Perry-Payne Building, CLEVELAND, O.

United States and Canadian Charts

Of the Lakes and Connecting Rivers are for sale at the office of THE MARINE RECORD.

Address SMITH & SMITH, 144 Superior St., CLEVELAND, O.